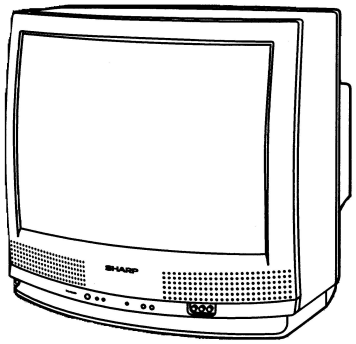
SHARP SERVICE MANUAL

S39D927L-S100



COLOR TELEVISION

Chassis No. SN-91

MODELS 27L-S100/27L-S180 CL27S10/CL27S18

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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ELECTRICAL SPECIFICATIONS

POWER INPUT ..... 120 V AC 60 Hz
POWER RATING ..... 110 W
PICTURE SIZE ..... 2,187cm^2 (339sq inch)
CONVERGENCE ..... Magnetic
SWEEP DEFLECTION ..... Magnetic
FOCUS ..... Hi-Bi-Potential Electrostatic
INTERMEDIATE FREQUENCIES
  Picture IF Carrier Frequency ..... 45.75 MHz
  Sound IF Carrier Frequency ..... 41.25 MHz
  Color Sub-Carrier Frequency ..... 42.17 MHz (Nominal)
AUDIO POWER
  OUTPUT RATING ..... 1.3W + 1.3W (at 10% distortion and Dual CH Operate)
SPEAKER
  SIZE ..... 8 cm (Round)
  VOICE COIL IMPEDANCE ..... 32 ohm at 400 Hz
ANTENNA INPUT IMPEDANCE
  VHF/UHF ..... 75 ohm Unbalanced
TUNING RANGES
  VHF-Channels ..... 2 thru 13
  UHF-Channels ..... 14 thru 69
  CATV Channels ..... 1 thru 125 (EIA, Channel Plan U.S.A.)

Specifications are subject to change without prior notice.

SHARP CORPORATION

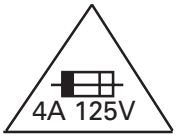
This document has been published to be used for after sales service only.
The contents are subject to change without notice.

IMPORTANT SERVICE SAFETY PRECAUTION

■ **Service work should be performed only by qualified service technicians who are throughly familiar with all safety checks and the servicing guidelines which follow:**

WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.
4. The chassis in this receiver has two ground systems which are separated by insulating material. The non-isolated (hot) ground system is for the B+ voltage regulator circuit and the horizontal output circuit. The isolated ground system is for the low B+ DC voltages and the secondary circuit of the high voltage transformer.
   To prevent electrical shock use an isolation transformer between the line cord and power receptacle, when servicing this chassis.



CAUTION: FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A-125V FUSE.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove the static charge by connecting a 10k ohm resistor in series with an insulated wire (such as a test probe) between the picture tube ground and the anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage anode completely.

X-RADIATION AND HIGH VOLTAGE LIMITS

1. Be sure all service personnel are aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in current solid state TV receivers is the picture tube. However, the picture tube does not emit measurable X-Ray radiation, if the high voltage is as specified in the "High Voltage Check" instructions.
   It is only when high voltage is excessive that X-radiation is capable of penetrating the shell of the picture tube including the lead in the glass material. The important precaution is to keep the high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter.
   The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value –no higher. Operation at higher voltages may cause a failure of the picture tube or high voltage circuitry and;also, under certain conditions, may produce radiation in exceeding of desirable levels.
4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.
5. Do not use a picture tube other than that specified or make unrecommended circuit modifications to the high voltage circuitry.
6. When trouble shooting and taking test measurements on a receiver with excessive high voltage, avoid being unnecessarily close to the receiver.
   Do not operate the receiver longer than is necessary to locate the cause of excessive voltage.

IMPORTANT SERVICE SAFETY PRECAUTION

(Continued)

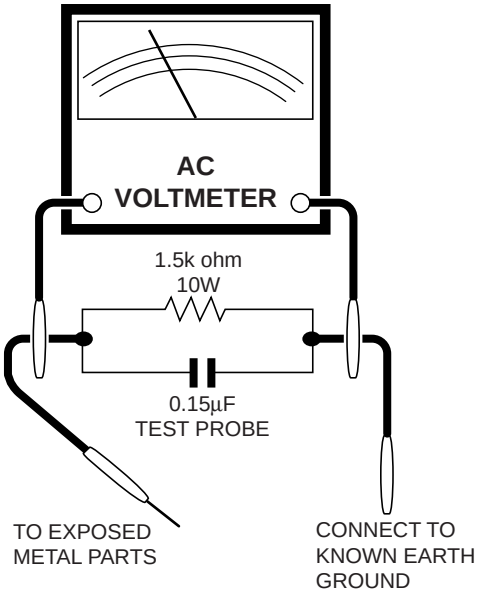
BEFORE RETURNING THE RECEIVER

(Fire & Shock Hazard)

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

- Plug the AC cord directly into a 120 volt AC outlet, (Do not use an isolation transformer for this test).
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15µF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to earth ground.
- Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor.
- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon and etc.) and measure the AC voltage drop across the resistor.
  AII checks must be repeated with the AC ine cord plug connection reversed. (If necessary, a non-polarized adapter plug must be used only for the purpose of completing these check.)
  Any current measured must not exceed 0.5 milliamp. Any measurements not within the limits outlined above indicate of a potential shock hazard and corrective action must be taken before returning the instrument to the customer.



SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.
Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" and shaded areas in the Replacement Parts Lists and Schematic Diagrams.

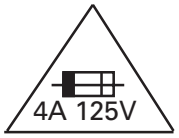
For continued protection, replacement parts must be identical to those used in the original circuit. The use of substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation or other hazards.

PRECAUTIONS A PRENDRE LORS DE LA REPARATION

■ **Ne peut effectuer la réparation qu' un technicien spécialisé qui s'est parfaitement accoutumé à toute vérification de sécurité et aux conseils suivants.**

AVERTISSEMENT

1. N'entreprendre aucune modification de tout circuit. C'est dangereux.
2. Débrancher le récepteur avant toute réparation.
3. Les déversoirs thermiques à semi-conducteurs peuvent présenter un danger de choc électrique lorsque le réceqteur est en marche.
4. Le châssis de ce récepteur possède deux systèmes de masse qui sont séparées par du matériel d'isolation. Le système de masse non-isolée (sous tension) est pour le circuit du régulateur de tension B+ et le circuit de sortie horizontale. Le système de masse isolée est pour les tensions DC B+ basses et le circuit secondaire du transformateur haute tension. Pour éviter tout risque d'électrocution lors de l'entretien de ce châssis, utiliser un transformateur d'isolation entre le cordon de ligne et la prise de courant.



PRECAUTION: POUR LA PROTECTION CONTINUE CONTRE LES RISQUES D'INCENDIE, REMPLACER LE FUSIBLE PAR UN FUSIBLE DE MEME TYPE 4A-125V.

REPARATION DU SYSTEME A HAUTE TENSION ET DU TUBE-IMAGE

Lors de la réparation de ce systéme, supprimer la charge statique en branchant une résistance de 10 kΩ en série avec un fil isolé (comme une sonde d'essai) entre la mise à la terre du tube-image et le fil d'anodel. (Le corden d'alimentation doit être retiré de la prise murale.)

1. Le tube image dans ce récepteur emploie une protection intégrée contre l'implosion.
2. Par mesure de sécurité, changer le tube-image pour un tube du même numéro de type.
3. Ne pas lever le tube-image par son col.
4. Ne manipuler le tube-image qu'en porant des lunettes incassables et qu'après avoir déchargé totalement la haute tension.

LIMITES DES RADIATIONS X ET DE LA HAUTE TENSION

1. Tout le personnel réparateur doit être instruit des instructions et procédés relatifs aux radiations X.
   Le tube-image, seule source de rayons X dons les téleviseurs transistorisés, n'émet pourtant pas de rayons mesurables si la haute tension est maintenue à un niveau préconisé dans la section "Vérification de la haute tension".
   C'est seulement quand la haute tension est excessive que les rayons X peuvent entrer dans l'enveloppe du tube-image y compris le conducteur de verre. Il est important de maintenir la haute tension en-dessous du niveau spécifié.
2. Il est essentiel que le réparateur ait sous la main un voltmètre à haute tension qui doit être périodiquement étalonné.
3. La haute tension doit toujours être maintenue à la valeur de régime -et pas plus haute. L'opération à des tensions plus élevées peut entraîner une panne du tube-image ou du circuit à haute tension et, dans certaines conditions, peut entraîner une radiation dépassant les niveaux préscrits.
4. Quand le régulateur à haute tension fonctionne correctement, il n'y a aucun problème de radiation X. Chaque fois qu'un châssis couleurs est réparé, la luminosité doit être examinée bout en contrôlant la haute tension à l'aide d'un voltmètre pour s'assurer que la haute tension ne dépasse pas la valeur spécifiée et qu'elle soit correctement réglée.
5. Ne pas utiliser un tube-image autre que celui spécifié et ne pas effectuer de modifications déconseillées du circuit à haute tension.
6. Lors de la recherche des pannes et des mesures d'essai sur un récepteur qui présente une haute tension excessive, éviter de s'approcher inutilement du récepteur.
   Ne pas faire fonctionner le récepteur plus longtemps que nécessaire pour localiser la cause de la tension excessive.

PRECAUTIONS A PRENDRE LORS DE LA REPARATION

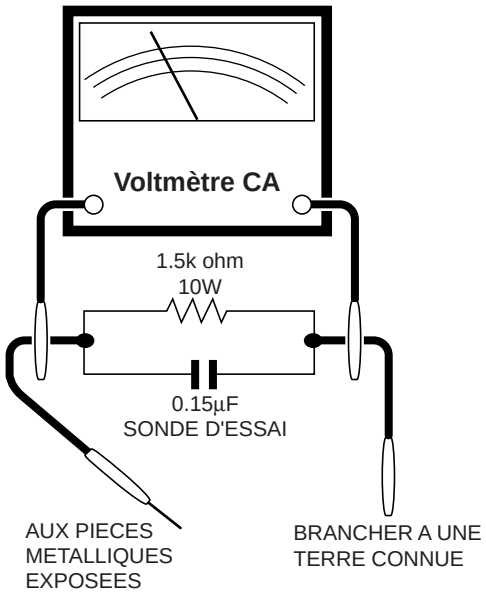
(Suite)

VERIFICATIONS CONTRE L'INCEN-DIE ET LE CHOC ELECTRIQUE

Avant de rendre le récepteur à l'utilisateur, effectuer les vérifications suivantes.

1. Inspecter tous les faisceaux de câbles pour s'assurer que les fils ne soient pas pincés ou qu'un outil ne soit pas placé entre le châssis et les autres pièces métalliques du récepteur.
2. Inspecter tous les dispositifs de protection comme les boutons de commande non-métalliques, les isolants, le dos du coffret, les couvercles ou blindages de réglage et de compartiment, les réseaux de résistance-capacité, les isolateurs mécaniques, etc.
3. S'assurer qu'il n'y ait pas de danger d'électrocution en vérifiant la fuite de courant, de la facon suivante:

- Brancher le cordon d'alimentation directem-ent à une prise de courant de 120V. (Ne pas utiliser de transformateur d'isolation pour cet essai).
- A l'aide de deux fils à pinces, brancher une résistance de 1,5 kΩ 10 watts en parallèle avec un condensateur de 0,15µF en série avec toutes les pièces métalliques exposées du coffret et une terre connue comme une conduite électrique ou une prise de terre branchée à la terre.
- Utiliser un voltmètre CA d'une sensibilité d'au moins 5000Ω/V pour mesurer la chute de tension en travers de la résistance.
- Toucher avec la sonde d'essai les pièces métalliques exposées qui présentent une voie de retour au châssis (antenne, coffret métallique, tête des vis, arbres de commande et des boutons, écusson, etc.) et mesurer la chute de tension CA en-travers de la résistance. Toutes les vérifications doivent être refaites après avoir inversé la fiche du cordon d'alimentation. (Si nécessaire, une prise d'adpatation non polarisée peut être utilisée dans le but de terminer ces vérifications.)
  Tous les courants mesurés ne doivent pas dépasser 0,5 mA.
  Dans le cas contraire, il y a une possibilité de choc électrique qui doit être supprimée avant de rendre le récepteur au client.

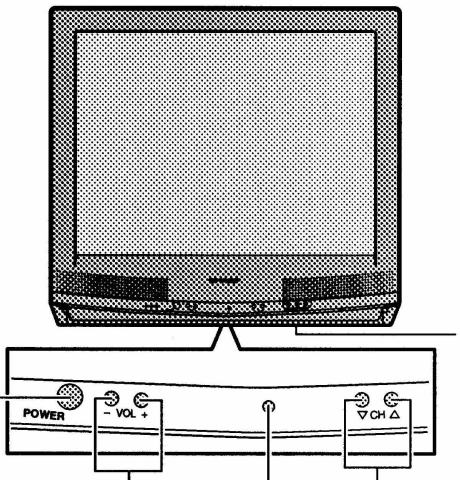


AVIS POUR LA SECURITE

De nombreuses pièces, électriques et mécaniques, dans les téléviseurs présentent des caractéristiques spéciales relatives à la sécurité, qui ne sont souvent pas évidentes à vue. Le degré de protection ne peut pas être nécessairement augmentée en utilisant des pièces de remplacement étalonnées pour haute tension, puissance, etc.
Les pièces de remplacement qui présentent ces caractéristiques sont identifiées dans ce manuel; les pièces électriques qui présentent ces particularités sont identifiées par la marque " ⚠ " et hachurées dans la liste des pièces de remplacement et les diagrammes schématiques.
Pour assurer la protection, ces pièces doivent être identiques à celles utilisées dans le circuit d'origine. L'utilisation de pièces qui n'ont pas les mêmes caractéristiques que les pièces recommandées par l'usine, indiquées dans ce manuel, peut provoquer des électrocutions, incendies, radiations X ou autres accidents.

LOCATION OF USER'S CONTROL
(27L-S100, CL27S10)

Front Panel



POWER
Press → On.
Press again → Off.

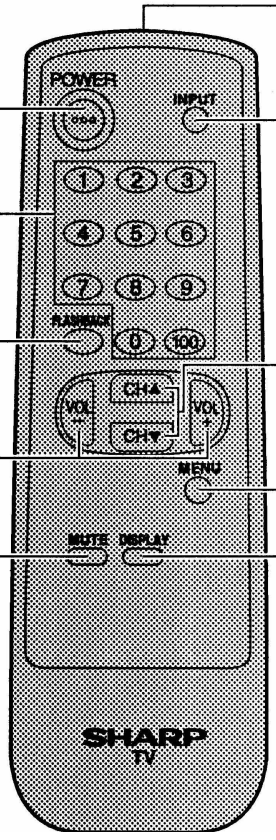
VOLUME UP/DOWN
(+) Increases sound.
(–) Decreases sound.

SENSOR AREA FOR REMOTE CONTROL

VIDEO/AUDIO IN 2 TERMINALS
(VIDEO/AUDIO terminals are also provided on the rear.)

CHANNEL UP/DOWN
(▲) Selects next higher channel.
(▼) Selects next lower channel.

Basic Remote Control Functions



Infrared Transmitter Window

POWER
Press → On.
Press again → Off.

REMOTE KEYPAD
Accesses any channel from keypad.

FLASHBACK
Returns to previous channel.

VOLUME UP/DOWN
(+) Increases sound.
(–) Decreases sound.
• In menu mode, changes or selects the TV adjustments.

MUTE
Press → Mutes sound.
Press again → Restores sound.
• CLOSED CAPTION appears when sound is muted.

INPUT
Press → Switch to external video INPUT 1 mode.
Press again → Switch to external video INPUT 2 mode.
Press 3 times → Switch back to the original TV mode.

CHANNEL UP/DOWN
(▲) Selects next higher channel.
(▼) Selects next lower channel.
• Moves the " ◆ " mark of the MENU screen.

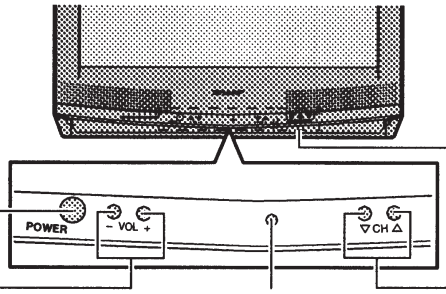
MENU
Press → Accesses MAIN MENU.
Press again → Exits MAIN MENU.

DISPLAY
Press → Displays receiving channel for 4 seconds.
Press again → Removes display.
• Temporarily displays receiving channel when in Closed Caption mode.

LOCATION OF USER'S CONTROL(Continued)

(27L-S180, CL27S18)

Front Panel



POWER
Press → On.
Press again → Off.

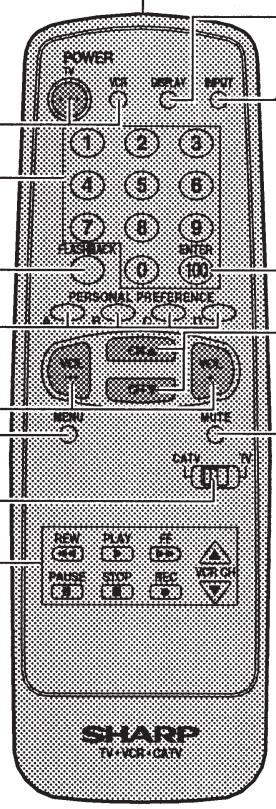
VOLUME UP/DOWN
(+) Increases sound.
(–) Decreases sound.

SENSOR AREA FOR REMOTE CONTROL

VIDEO/AUDIO IN 2 TERMINALS
(VIDEO/AUDIO terminals are also provided on the rear.)

CHANNEL UP/DOWN
(▲) Selects next higher channel.
(▼) Selects next lower channel.

Basic Remote Control Functions



POWER
Press → On.
Press again → Off.

REMOTE KEYPAD
Accesses any channel from keypad.

FLASHBACK
Returns to previous channel.

PERSONAL PREFERENCE
With the Personal Preference buttons, you can program your favorite programs by using the 4 categories A, B, C and D. The channels can be accessed quickly by using these buttons.

VOLUME UP/DOWN
(+) Increases sound.
(–) Decreases sound.
- In menu mode, changes or selects the TV adjustments.

MENU
Press → Accesses MAIN MENU.
Press again → Exits MAIN MENU.

TV-CATV MODE SELECT SWITCH
In TV position, sends power and channel select commands (Channel up/down and Random Access buttons) to the TV.
In CATV position, sends power and channel select commands to a cable TV converter.

VCR CONTROL

Infrared Transmitter Window

DISPLAY
Press → Displays receiving channel for 4 seconds.
Press again → Removes display.
- Temporarily displays receiving channel when in Closed Caption mode.

INPUT
Press → Switch to external video INPUT 1 mode.
Press again → Switch to external video INPUT 2 mode.
Press 3 times → Switch back to the original TV mode.

ENTER
Used in some instances where a VCR or Cable Converter Box requires an "enter" command after selecting channels, when using the REMOTE KEYPAD button.

CHANNEL UP/DOWN
(▲) Selects next higher channel.
(▼) Selects next lower channel.
- Moves the " ⬍ " mark of the MENU screens.

MUTE
Press → Mutes sound.
Press again → Restores sound.
- CLOSED CAPTION appears when sound is muted.

Note:

- The above shaded buttons on the Remote Control glow in the dark. To use the glow-in-the-dark display on the remote control, place it under a fluorescent light or other lighting.
- The phosphorescent material contains no radioactive or toxic material, so it is safe to use.
- The degree of illumination will vary depending on the strength of lighting used.
- The degree of illumination will decrease with time and depending on the temperature.
- The time needed to charge the phosphorescent display will vary depending on the surrounding lighting.
- Sunlight and fluorescent lighting are the most effective when charging the display.

INSTALLATION AND SERVICE INSTRUCTIONS

Note: (1) When performing any adjustments to resistor controls and transformers use non-metallic screwdrivers or TV alignment tools.
(2) Before performing adjustments, the TV set must be on at least 15 minutes.

CIRCUIT PROTECTION

The receiver is protected by a 4.0A fuse (F701), mounted on PWB-A, wired into one side of the AC line input.

X-RADIATION PROTECTOR CIRCUIT TEST

After service has been performed on the horizontal deflection system, high voltage system, B+ system, test the X-Radiation protection circuit to ascertain proper operation as follows:

1. Apply 120V AC using a variac transformer for accurate input voltage.
2. Allow for warm up and adjust all customer controls for normal picture and sound.
3. Receive a good local channel.
4. Connect a digital voltmeter to TP653 and make sure that the voltmeter reads 11.2 ± 0.6V.
5. Apply external 13.8V DC at TP653 by using an external DC supply, TV must be shut off.
6. To reset the protector, unplug the AC cord and make a short circuit between TP651 and TP652. Now make sure that normal picture appears on the screen.
7. If the operation of the horizontal oscillator does not stop in step 5, the circuit must be repaired before the set is returned to the customer.

HIGH VOLTAGE CHECK

High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified checks should be as follows:

1. Connect an accurate high voltage meter between ground and anode of picture tube.
2. Operate receiver for at least 15 minutes at 120V AC line voltage, with a strong air signal or a properly tuned in test signal.
3. Enter the service mode and select the service adjustment "S19" and Bus data "01" (Y-mute on).
4. The voltage should be approximately, 28.7kV (at zero beam).
   If a correct reading cannot be obtained, check circuitry for malfunctioning components. After the voltage test, make Y-mute off to the normal mode.

For adjustments of this model, the bus data is converted to various analog signals by the D/A converter circuit.

Note: There are still a few analog adjustments in this series such as focus and master screen voltage. Follow the steps below whenever the service adjustment is required. See "Table-B" to determine, if service adjustments are required.

1. Service mode

Before putting unit into the service mode, check that customer adjustments are in the normal mode. Use the reset function in the video adjustment menu to ensure customer controls are in their proper (reset) position.

2. Service number selection

Once in the service mode, press the Ch-up or Ch-down button on the remote controller or at the set. The service adjustment number will vary in increments of one, from "S01" to "M05". Select the item you wish to adjust.

3. Data number selection

Press the Vol-up or down button to adjust the data number.

To enter the service mode and exit service mode.

While pressing the Vol-up and Ch-up buttons at the sametime, plug the AC cord into a wall socket.
Now the TV set is switched on and enters the service mode.
To exit the service mode, turn the television off by pressing the power button.

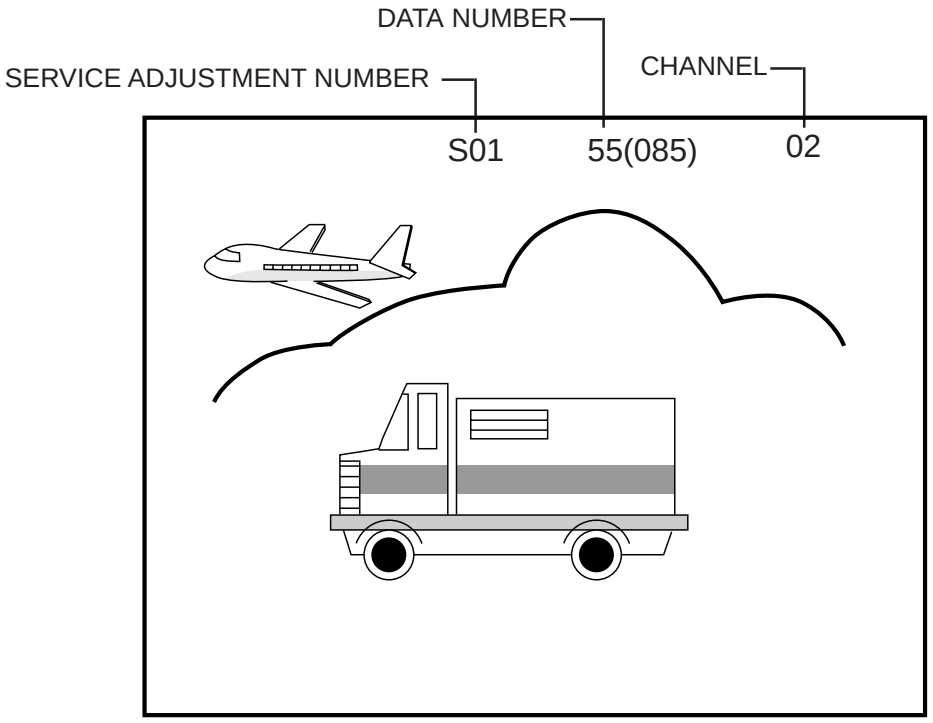


Figure A.

SERVICE NUMBER	ADJUSTMENT ITEM	DATA		ADJUSTMENT CONTENTS
		INITIAL VALUE	RANGE	
S01	PICTURE	55	00-7F	
S02	TINT	46	00-7F	
S03	COLOR	32	00-7F	
S04	BRIGHTNESS	40	00-7F	
S05	SHARPNESS	28	00-3F	Must be set to "28"
S06	VERTICAL PHASE	00	00-07	Must be set to "00"
S07	HORIZONTAL PHASE	12	00-1F	
S08	RF-AGC	23	00-3F	
S09	VERTICAL AMP	20	00-3F	
S10	PIF VCO	2C	00-7F	
S11	R CUT-OFF	00	00-FF	
S12	G CUT -OFF	00	00-FF	
S13	B CUT-OFF	00	00-FF	
S14	G GAIN	7F	00-FF	
S15	B GAIN	7F	00-FF	
S16	TRAP	00	00 or 01	Must be set to "00"
S17	BALANCE	20	00-3F	Must be set to "20"
S18	C.C.POSITION	17	00-7F	
S19	MUTE	00	00,01,03	"00"=Normal, "01"=No-Y, "03"=No Vertical
S20	ENERGY SAVE OFFSET	20	00-3F	Must be set to "23"
S21	D.D.E. OFFSET	03	00-1F	Must be set to "03"
S22	OSD SETUP	00	00-03	Must be set to "00"
S23	TUNER SETUP	00	00, 01	Must be set to "00"
OP.	OPTION (Set to each model)	30	00-FF	Must be set to "26"=27L-S100, "3E"=27L-S180
M01	INPUT LEVEL	0A	00-0F	
M02	ST VCO	20	00-3F	
M03	FILTER	1C	00-3F	
M04	WIDE BAND	20	00-3F	
M05	SPECTRAL	1B	00-3F	

Table - A

Holding down both the CH-up/down buttons on the TV set at service mode for more than 2 seconds will automatically write the above initial values into IC2101.

PART REPLACED	ADJUSTMENT		NOTES
	NECESSARY	UNNECESSARY	
IC2001		X	Data is stored in IC2101.
IC201	X		The adjustment is needed to compensate for characteristics of parts including IC201 and MTS level (M01).
IC2101	X		Holding down both the CH-up/down bottons on the TV set in the service mode for more than 2 seconds will automatically write the above initial values into IC2101. Then perform a complete adjustment.
CRT	X		Adjust items related to picture tube only.
IC3001	X		Adjust items related to MTS only (M01~M05).

Table - B

■ SERVICE ADJUSTMENT

VCO Adjustment

1. Connect a digital voltmeter between pin (44) of IC201 and ground.
2. Receive a good local channel.
3. Enter the service mode and select the service adjustment "S10".
4. Adjust the data so that digital voltmeter reads 2.2V.
5. Adjustment is completed, remove the voltmeter, return to "normal" mode.

RF AGC Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "S08".
3. Set the data value to point where no noise or beat appears.
4. Select another channel to confirm that no noise or beat appears.
   Note 1 : You will have to come out of the service mode to select another channel.
   Note 2 : Setting the data to "00" will produce a black raster.

Screen Adjustment

1. Connect a oscilloscope between TP854 and GND on the CRT Unit.
2. Receive a good local channel.
3. Enter the service mode and select the service adjustment "S03" and set the data value to "00" to set the color level to minimum. (Record original data code under adjustment "S03" before changing) You may skip this step, if you selected a B/W picture or monoscope pattern.
4. Select the service adjustment "S19" and adjust the data value to "01", this turn off the luminance signal (Y-mute).
5. Select the service adjustment "S04" and adjust data value to obtain 2.35 volts on the oscilloscope screen.
6. Adjust the master screen cotrol until the raster darkens to the point where raster is barely seen.
7. Adjust the service adjustments "S11" red, "S12" green and "S13" blue to obtain a good grey scale with normal whites at low brightness level.
8. Select the service adjustment "S19" and reset data to "00". Select the service adjustment "S03" and reset data to obtain normal color level.
9. Remove oscilloscope, and reset the master screen control to obtain normal brightness range.

White Balance Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "S03" and set to "00" (minimum color)(Record original data code under adjustment "S03" before changing). "S03" does not have to be adjusted, if you selected a B/W picture or monoscope pattern.
3. Alternately adjust the service adjustment data of "S14" and "S15" until a good grey scale with normal whites is obtained.
4. Select the service adjustment "S03" and adjust data to obtain normal color level.

Sub-Picture Adjustment

1. Receive a good local channel.
2. Make sure the customer picture control is set to maximum.
3. Enter the service mode and select the service adjustment "S01".
4. Adjust the data value to achieve normal contrast range.

Sub-Tint Adjustment

1. Receive a good local channel.
2. Set customer tint control to center of it's range.
3. Enter the service mode and select the service adjustment "S02".
4. Adjust "S02" data value to obtain normal flesh tones.

Sub-Color Adjustment

1. Receive a good local channel.
2. Make sure the customer color control is set to center position .
3. Enter the service mode and select service adjustment "S03".
4. Adjust "S03" data value to obtain normal color level.

Sub-Brightness Adjustment

1. Receive a good local channel.
2. Make sure the customer brightness control is set to center position.
3. Enter the service mode and select the service adjustment "S04".
4. Adjust "S04" data value to obtain normal brightness level.

Vertical-Size Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "S09".
3. While observing the top and bottom of the screen, adjust "S09" data value to proper vertical size.

Vertical Phase Adjustment

1. Enter the service mode and select the service adjustment "S06".
2. Adjust data value to "00".

Note: This must be set "00" when changed data retrace line will appear.

Horizontal Position Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "S07".
3. Adjust "S07" data value so that picture is centered.

Caption Position Adjustment (Horizontal)

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "S18".
3. A black text box appears on the screen. (see **Figure B.** below)
4. Adjust "S18" data value so that text box is positioned in the center of the screen.

3.58MHz Trap Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "S16".
3. This is a two position adjustment, "00" is ON, "01" is OFF.
4. Adjust data value to "00" for normal viewing.

Sharpness and Audio Balance Adjustments

1. Receive a good local channel.
2. Enter the service mode and select the service adjustments "S05" for sharpness and "S17" for balance.

- **Sharpness Adjustment**

3. Adjust data value to "28"(center of data range) for sharpness adjustment.

- **Audio Balance Adjustment**

4. Adjust data value to "20"(center of data range) for audio balance adjustment.

Energy save offset Adjustment

1. Enter the service mode and select the service adjustment "S20".
2. Adjust data value to "23".

Note : This position is used to preset the level for the energy save function.

Other Adjustments

1. Enter the service mode.
2. Adjust the following data values as listed below.

S21	"03"	DDE OFFSET
S22	"00"	OSD SETUP
S23	"00"	TUNER SETUP

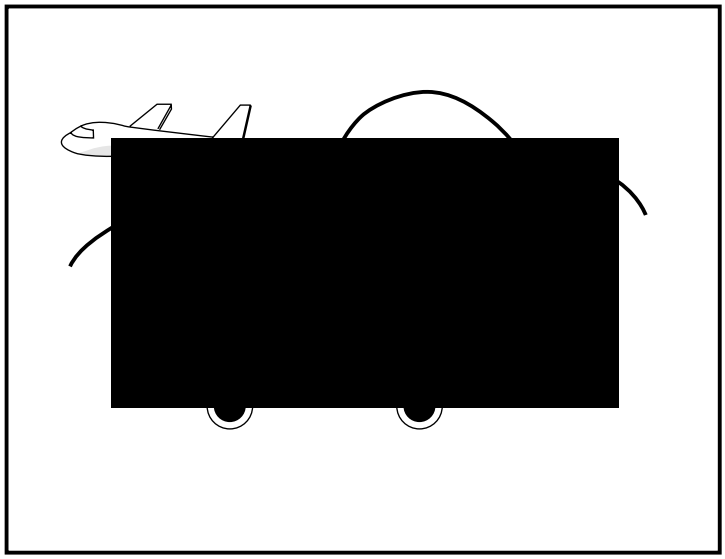


Figure B.

■ MTS ADJUSTMENT

MTS Level Adjustment

1. Feed the following monaural signal to pin (14) of IC3001.
   Monaural signal : 300Hz, 245mVrms
2. Connect the rms voltmeter to pin (39) of IC3001.
3. Enter the service mode and select the service adjustment "M01".
4. Adjust the data so that the rms voltmeter reads.
   Spec.: 490 ±10mVrms.

MTS VCO Adjustment

1. Keep the unit in no-signal state.
2. Connect the frequency counter to pin (39) of IC3001.
3. Connect a capacitor (100µF, 50V) in between positive(+) side of C3005 and ground.
4. Enter the service mode and select the service adjustment "M02"
5. Adjust the data so that the frequency counter reads.
   Spec.: 62.94 ±0.75kHz.

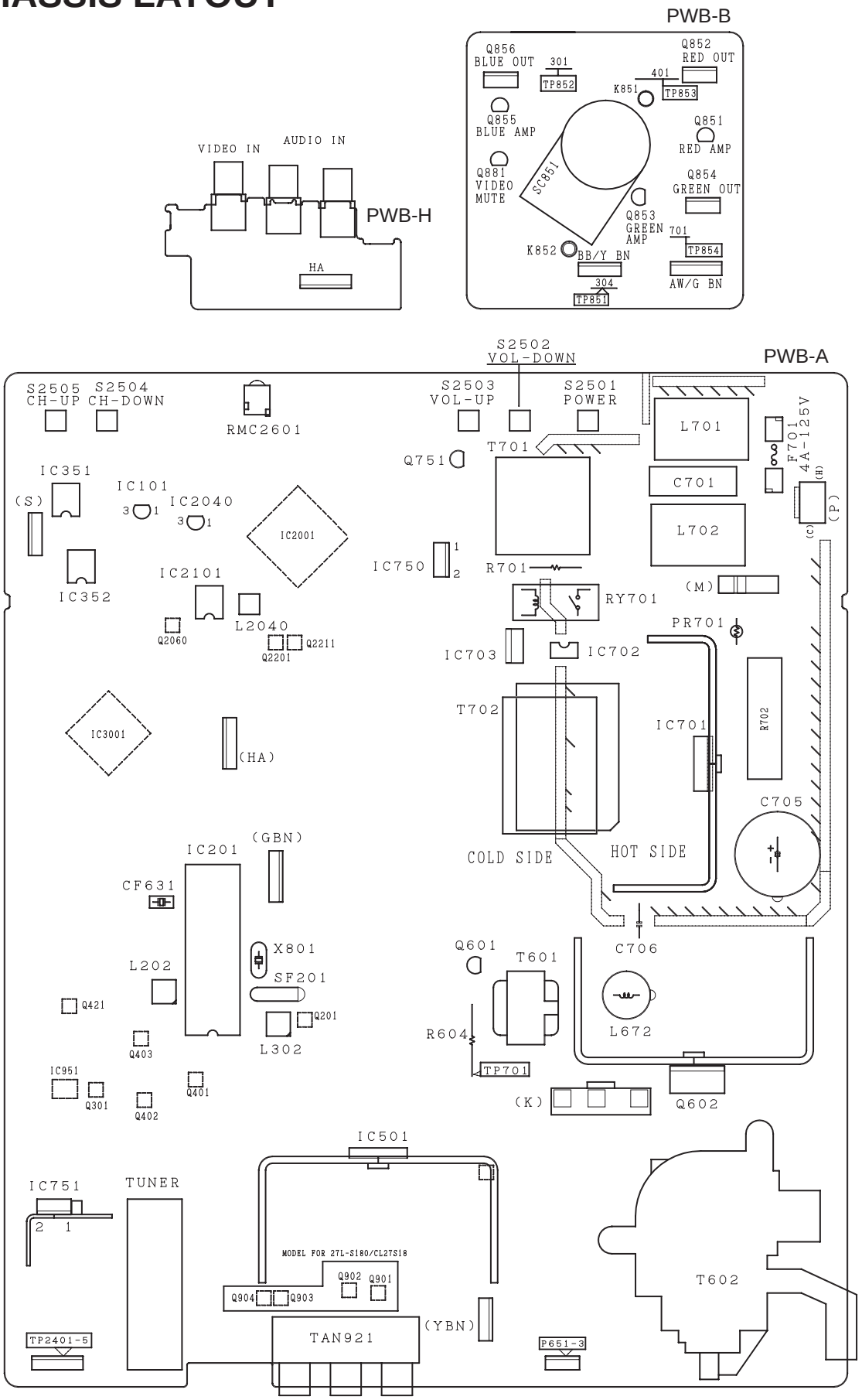
Filter Adjustment

1. Feed the following stereo pilot signal to pin (14) of IC3001 .
   Stereo pilot signal: 9.4kHz, 600mVrms.
2. Enter the service mode and select the service adjustment "M03".
3. Adjust the data at the point where "OK" appears on the screen. The "OK" represents the approximate center of the adjustable range of the data.

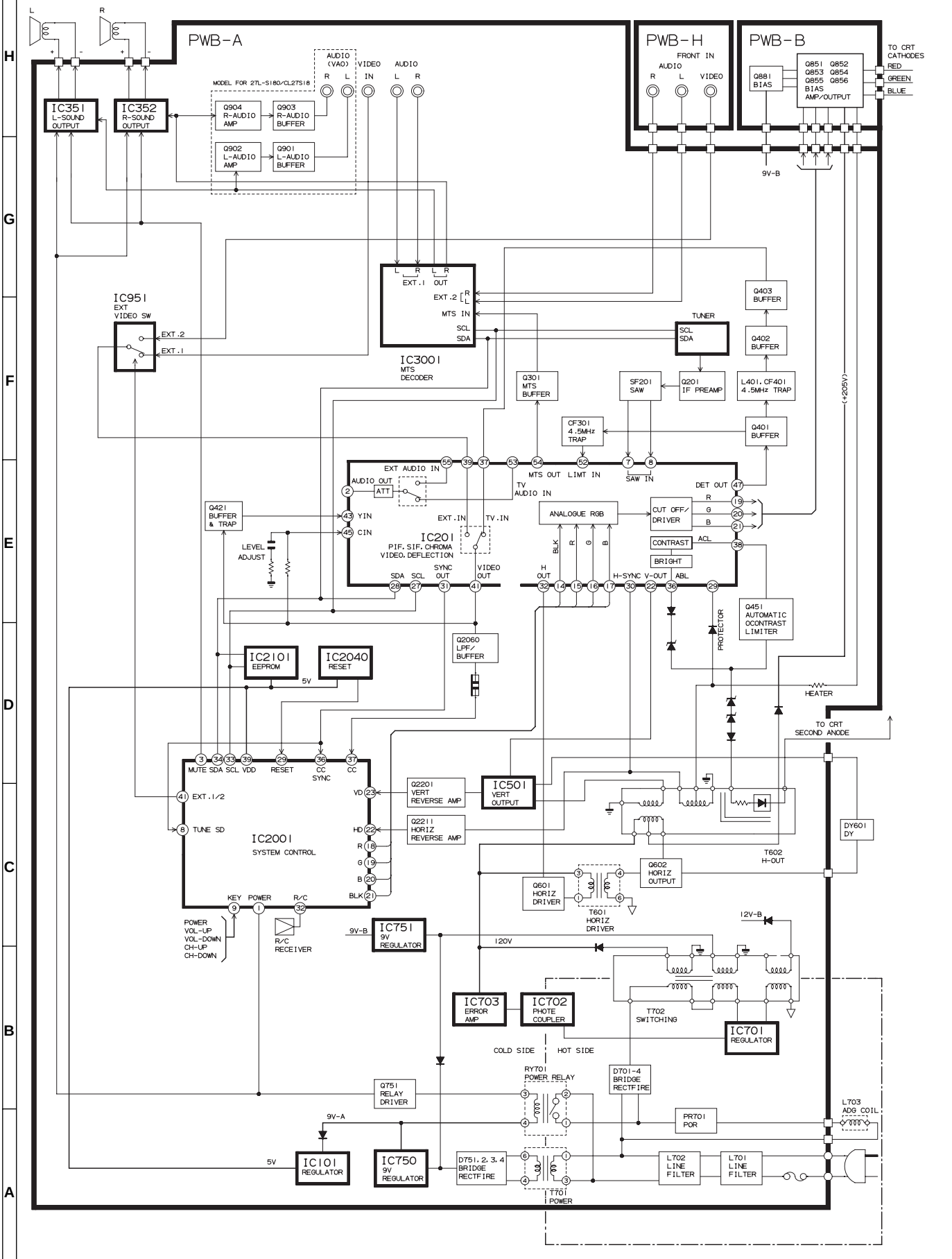
Separation Adjustment

1. Connect the rms voltmeter to pin (39) of IC3001.
2. Receive the following composite stereo signal 1.
   Composite stereo signal: 30% modulation, left channel only, noise reduction on, 300Hz
3. Enter the service mode and select the service adjustment "M04".
4. Adjust the data until the AC voltage reading of the rms voltmeter is minimum.
5. Receive the following composite stereo signal 2.
   Stereo signal: 30% modulation, left channel only, noise reduction on, 3kHz
6. Enter the service mode and select the service adjustment "M05".
7. Adjust the data until the AC voltage reading of the rms voltmeter is minimum.
8. Take the above steps 1 thru 8 again for fine adjustment.

CHASSIS LAYOUT



BLOCK DIAGRAM



DESCRIPTION OF SCHEMATIC DIAGRAM

NOTES:

1. *The unit of resistance "ohm" is omitted. (K=kΩ=1000Ω, M=MΩ)*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors are μ F, unless otherwise noted. (P=pF=μμF)*
4. *(G) indicates ±2% tolerance may be used.*
5. ⏚ *indicates line isolated ground.*
6. ⏚ *indicates hot ground.*

VOLTAGE MEASUREMENT CONDITIONS:

1. *All DC voltages are measured with DVM connected between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.*
2. *All voltages measured with 1000μ V B & W or Color signal.*

WAVEFORM MEASUREMENT CONDITIONS:

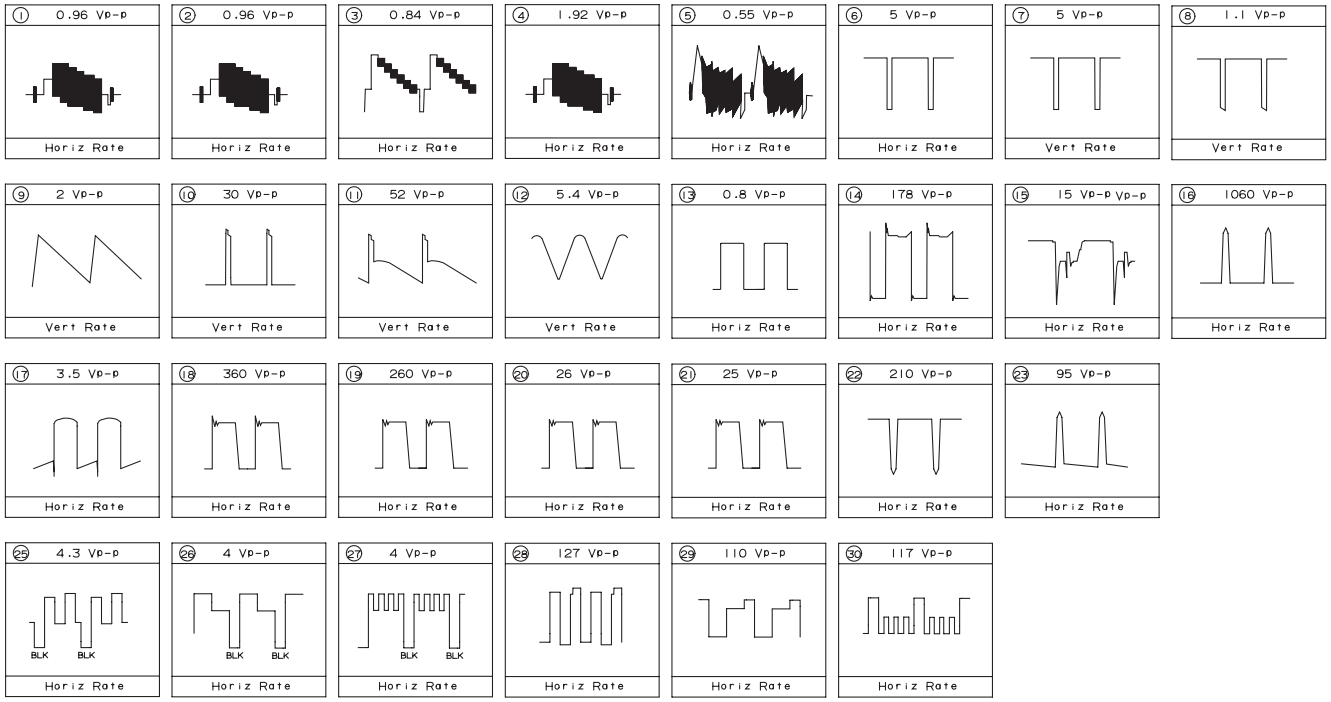
1. *Photographs taken on a standard gated color bar signal, the tint setting adjusted for proper color. The wave shapes at the red, green and blue cathodes of the picture tube depend on the tint, color level and picture control.*
2. ◯▶ *indicates waveform check points (See chart, waveforms are measured from point indicated to chassis ground.)*

⚠ *AND SHADED ( ) COMPONENTS = SAFETY RELATED PARTS.*
▲ *MARK= X-RAY RELATED PARTS.*

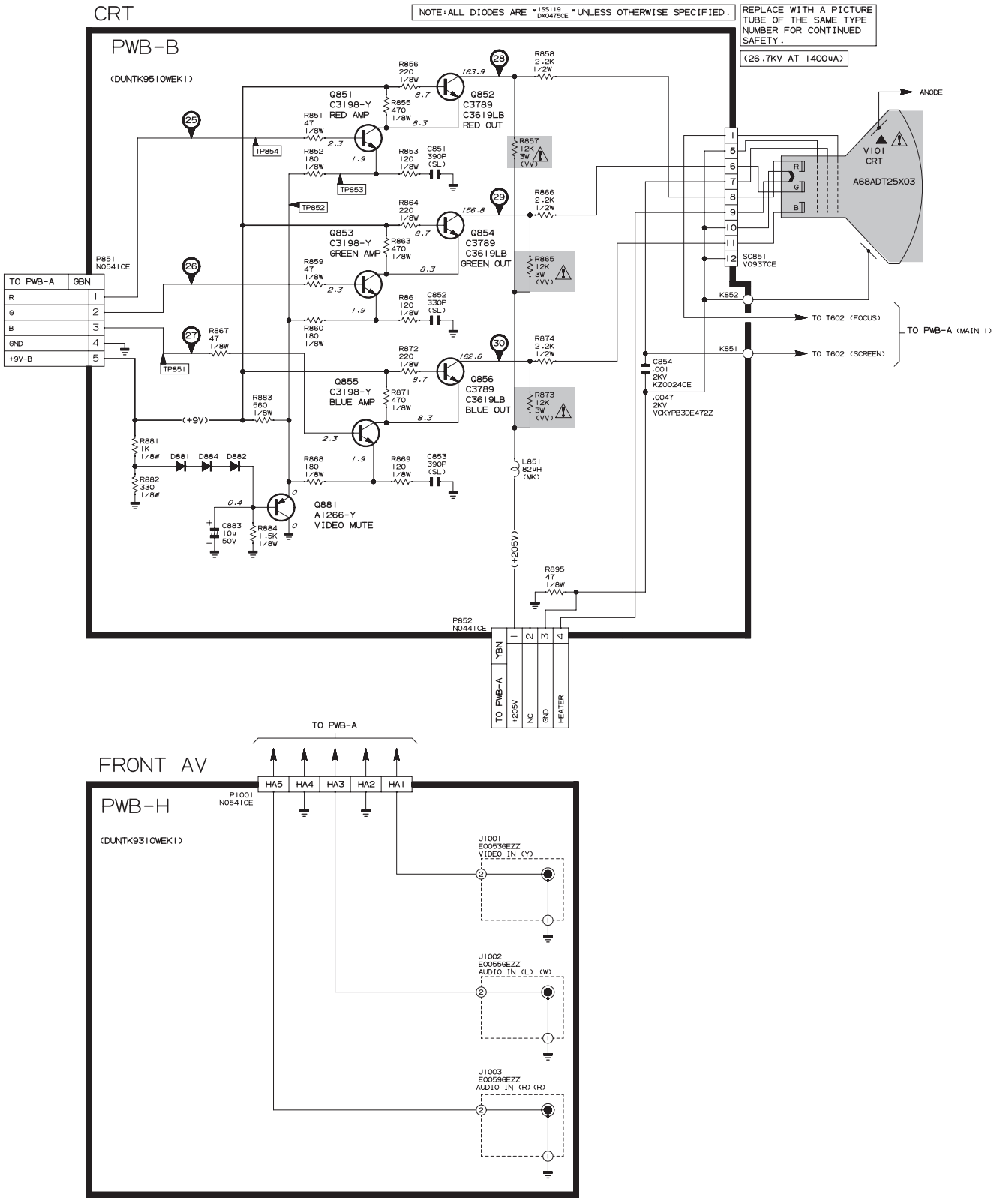
DRGANNES MARQUES ⚠ ET HACHRES ( ): PIECES RELATIVES A LA SECURITE.
MARQUE ▲ : PIECS RELATIVE AUX RAYONS X.

This circuit diagram is a standard one, printed circuits may be subject to change for product improvement without prior notice.

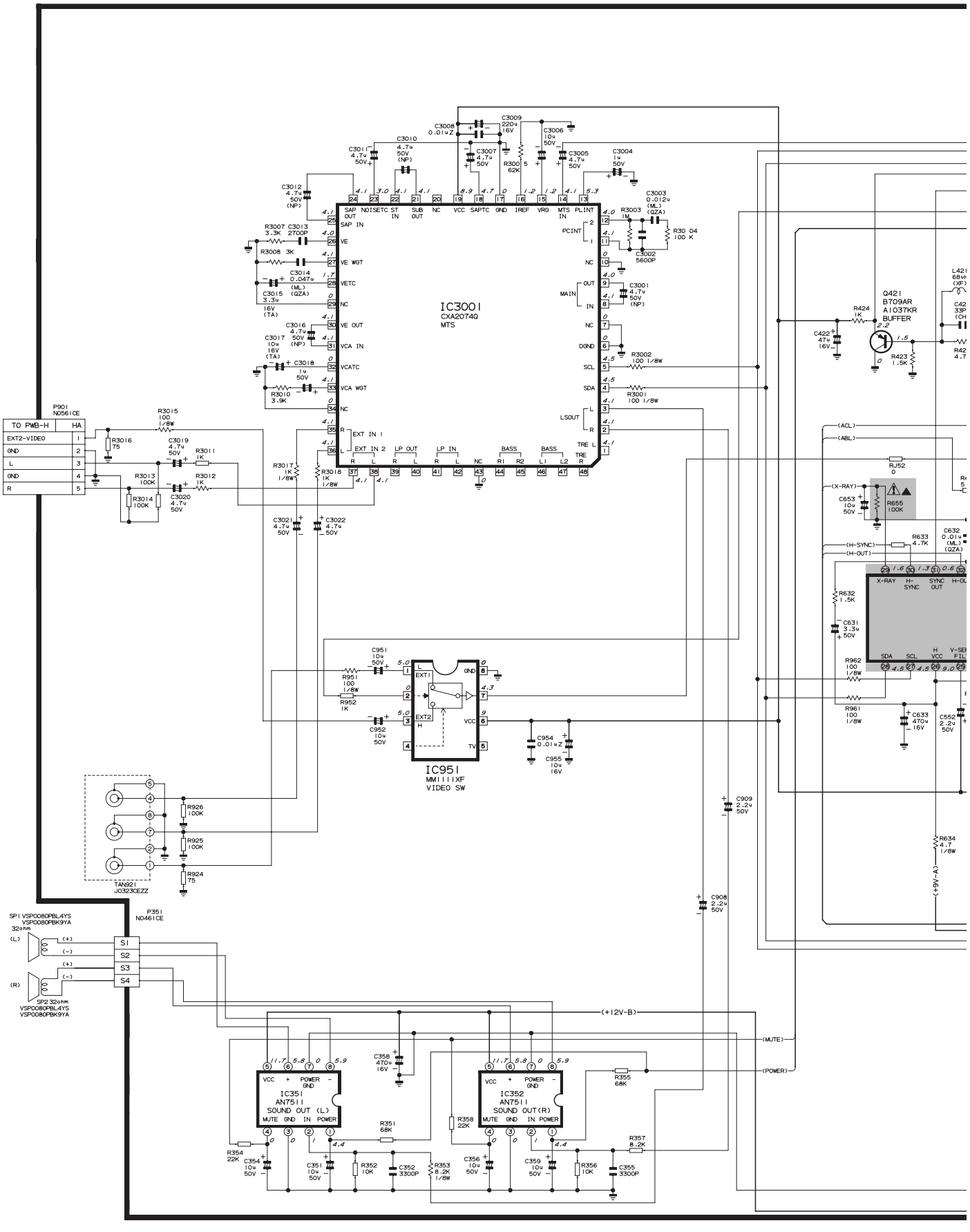
WAVE FORMS



SCHEMATIC DIAGRAM: CRT and FRONT AV Units



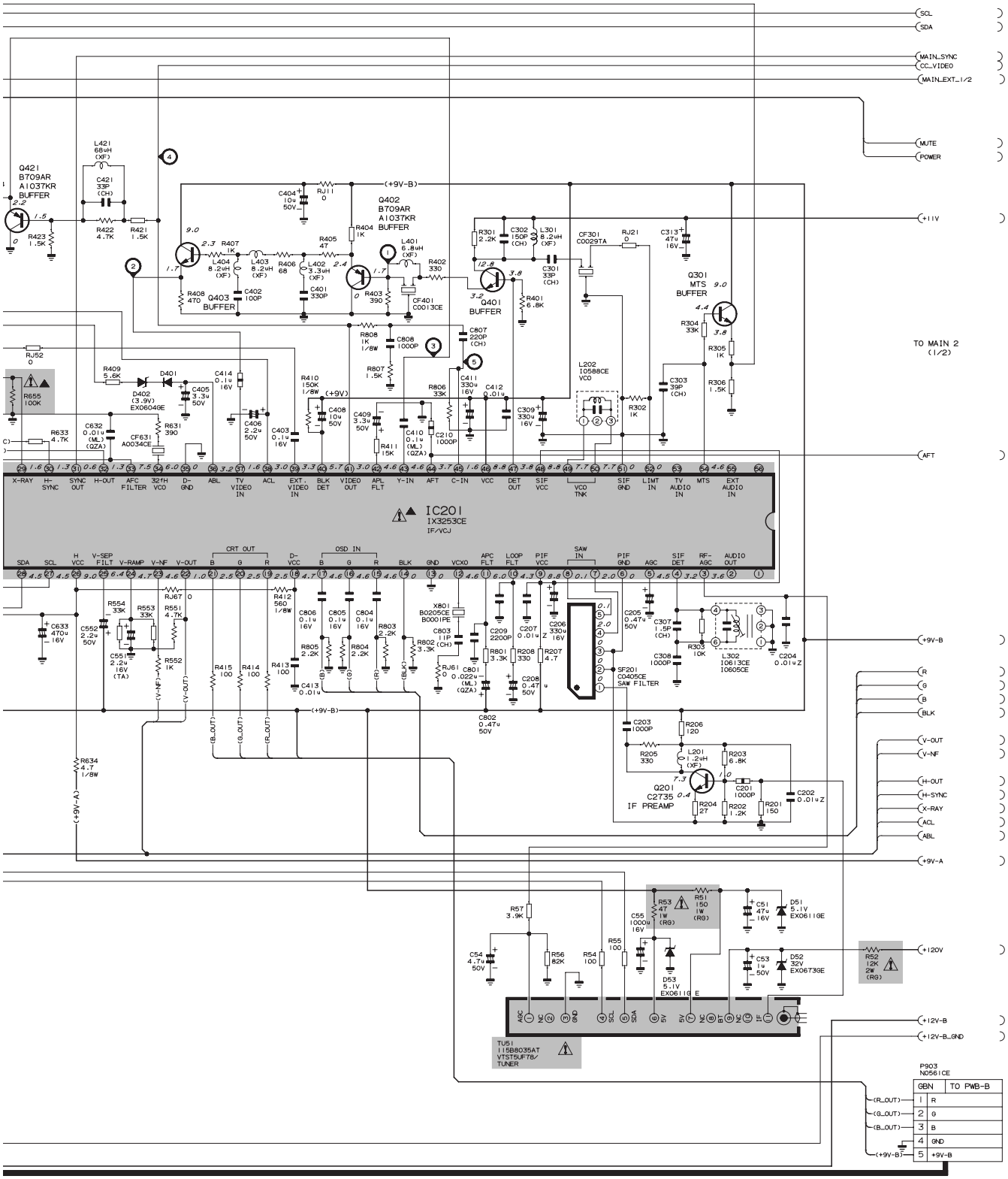
MODEL 27L-S100, CL27S10 SCHEMATIC DIAGRAM: MAIN-1 Unit



NOTE: ALL DIODES ARE "DX0475CE" UNLESS OTHERWISE SPECIFIED.
: ALL TRANSISTORS ARE "2SC2412" OR "2SD601AR" UNLESS OTHERWISE SPECIFIED.

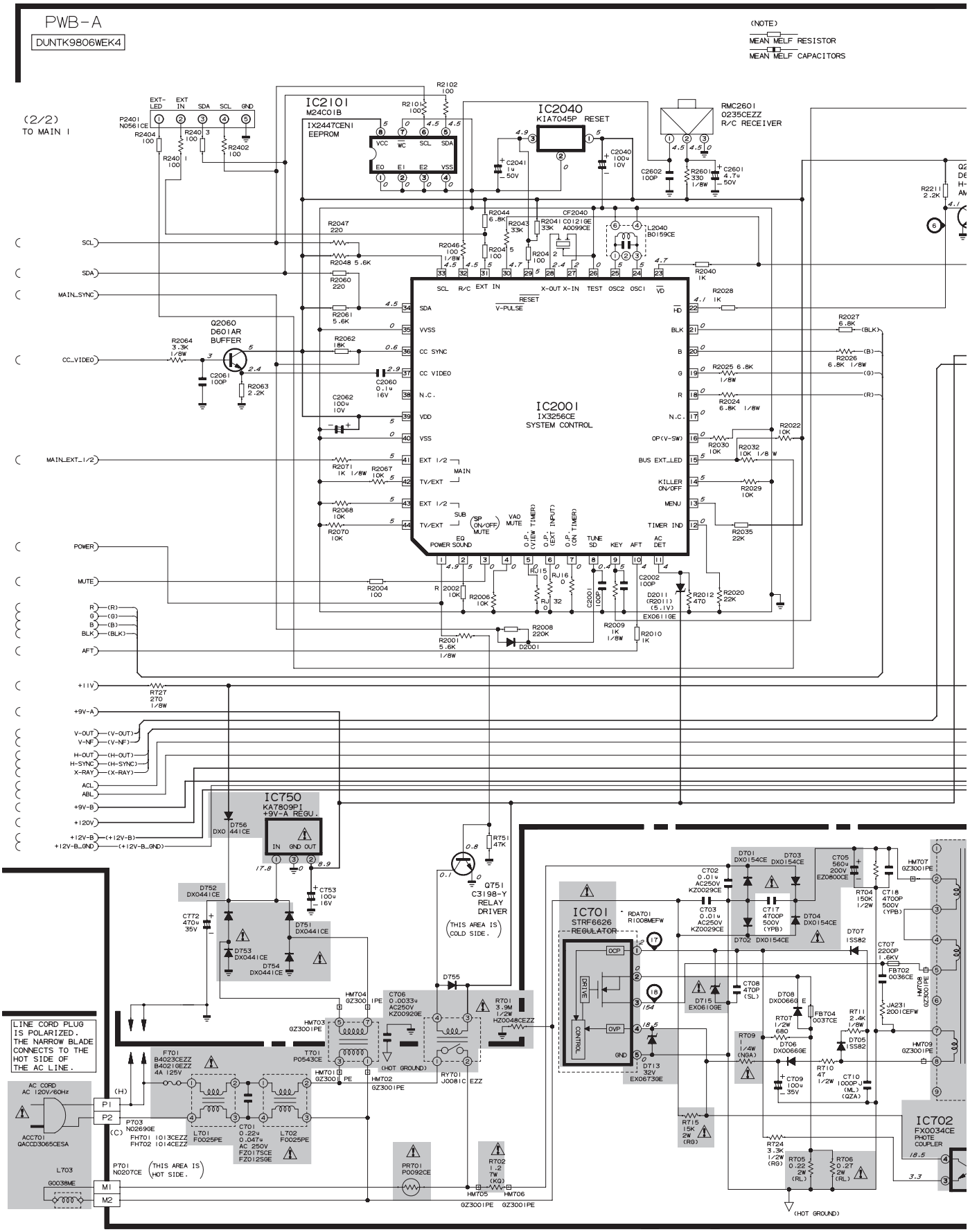
PWB-A
DUNTK9806WEK4

(NOTE)
MEAN MELF RESISTOR
MEAN MELF CAPACITORS

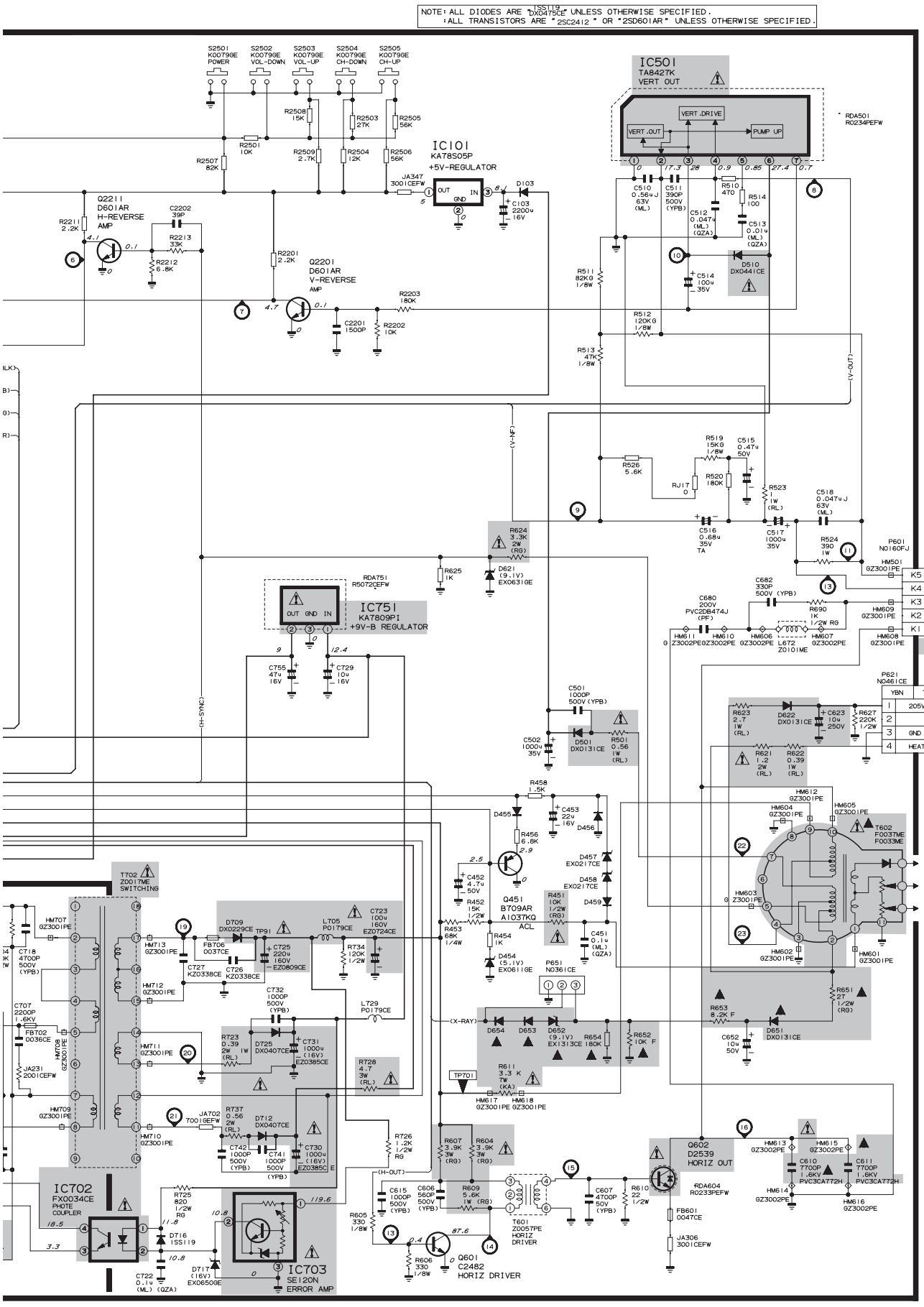


10	11	12	13	14	15	16	17	18	19

MODEL 27L-S100, CL27S10 SCHEMATIC DIAGRAM: MAIN-2 Unit

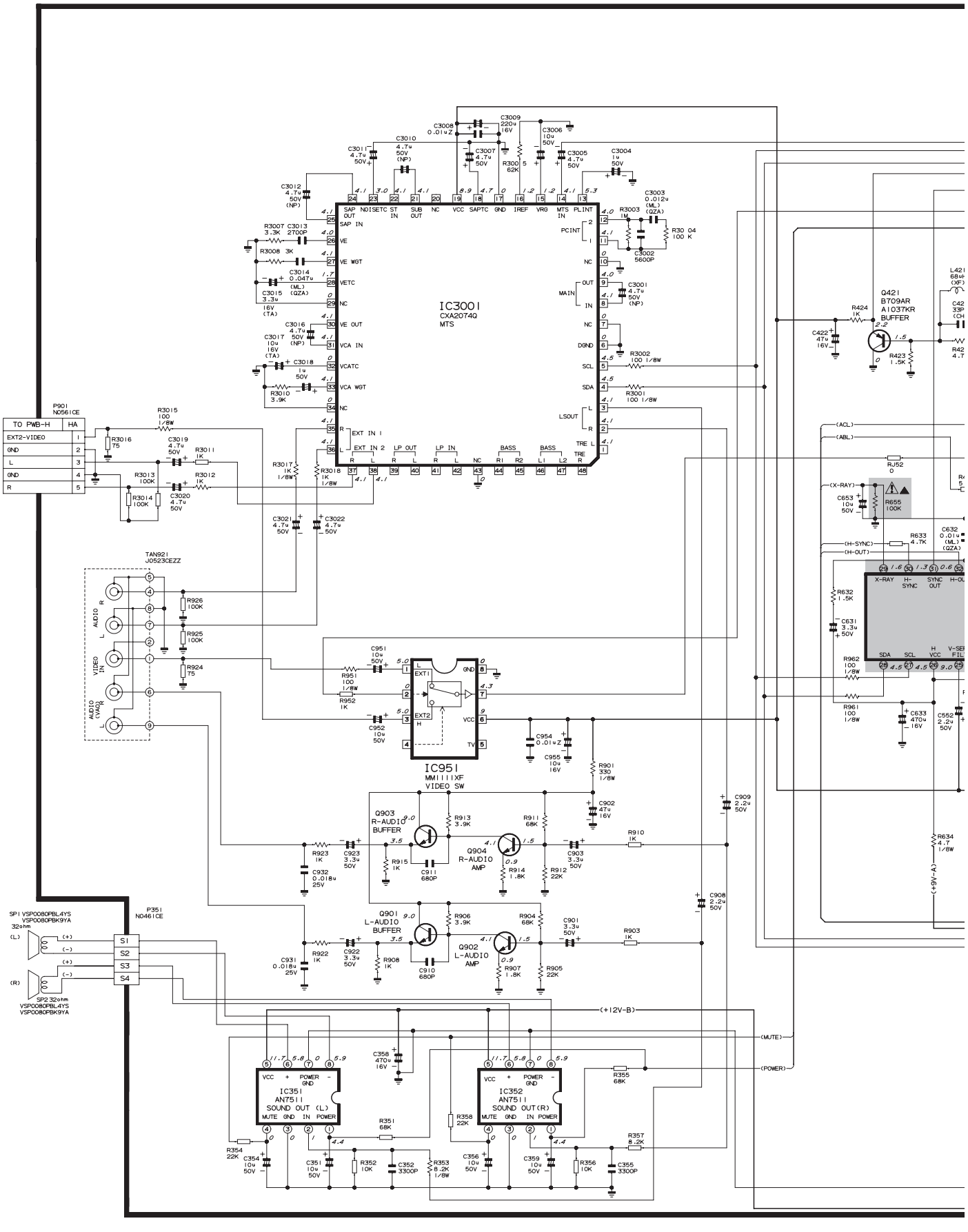


1	2	3	4	5	6	7	8	9	10



10	11	12	13	14	15	16	17	18	19

MODEL 27L-S180, CL27S18 SCHEMATIC DIAGRAM: MAIN-1 Unit

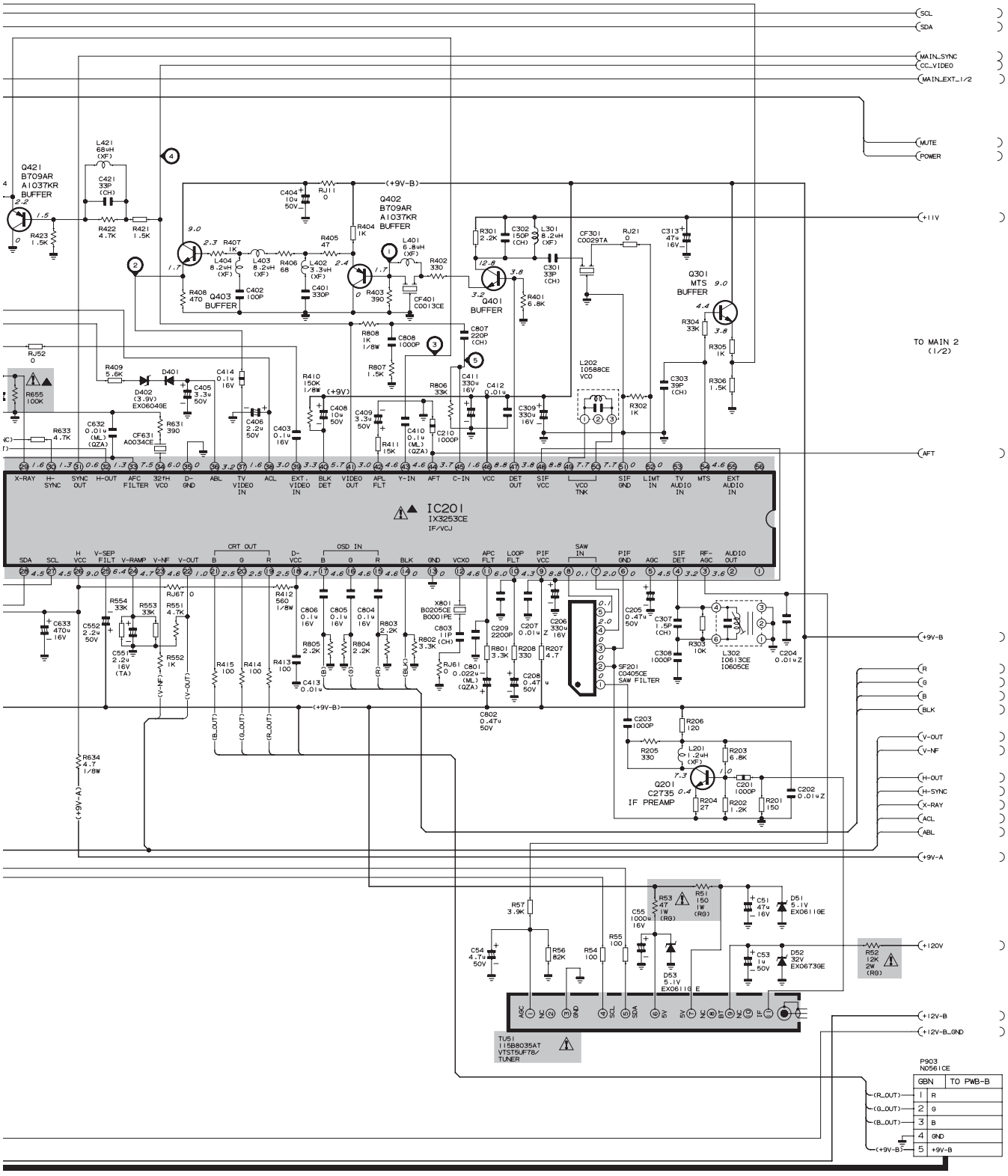


NOTE: ALL DIODES ARE "1SS119" "DX0475CE" UNLESS OTHERWISE SPECIFIED.
: ALL TRANSISTORS ARE " 2SC2412 " OR "2SD601AR" UNLESS OTHERWISE SPECIFIED.

PWB-A

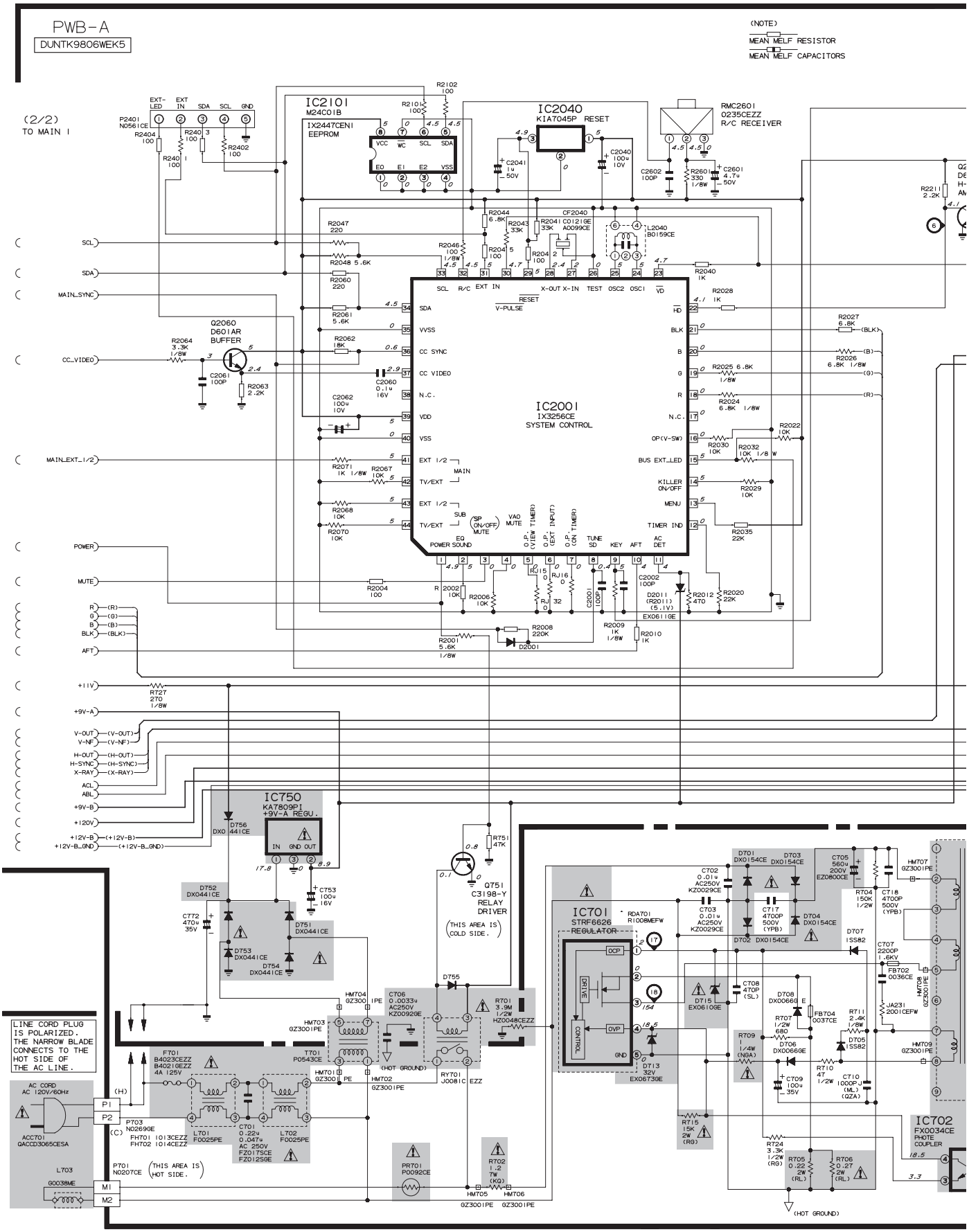
DUNTK9806WEK5

(NOTE)
MEAN MELF RESISTOR
MEAN MELF CAPACITORS

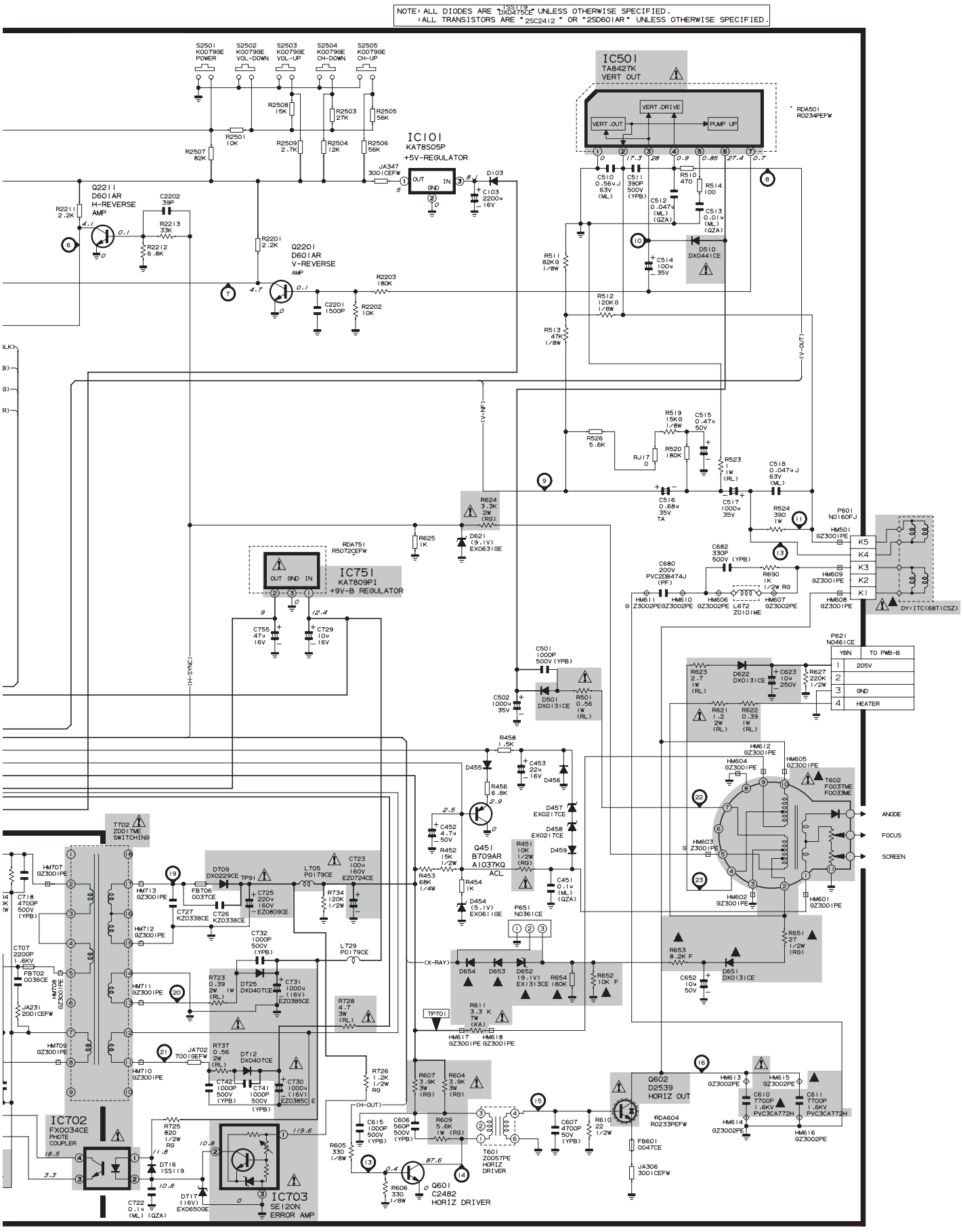


10	11	12	13	14	15	16	17	18	19

MODEL 27L-S180, CL27S18 SCHEMATIC DIAGRAM: MAIN-2 Unit

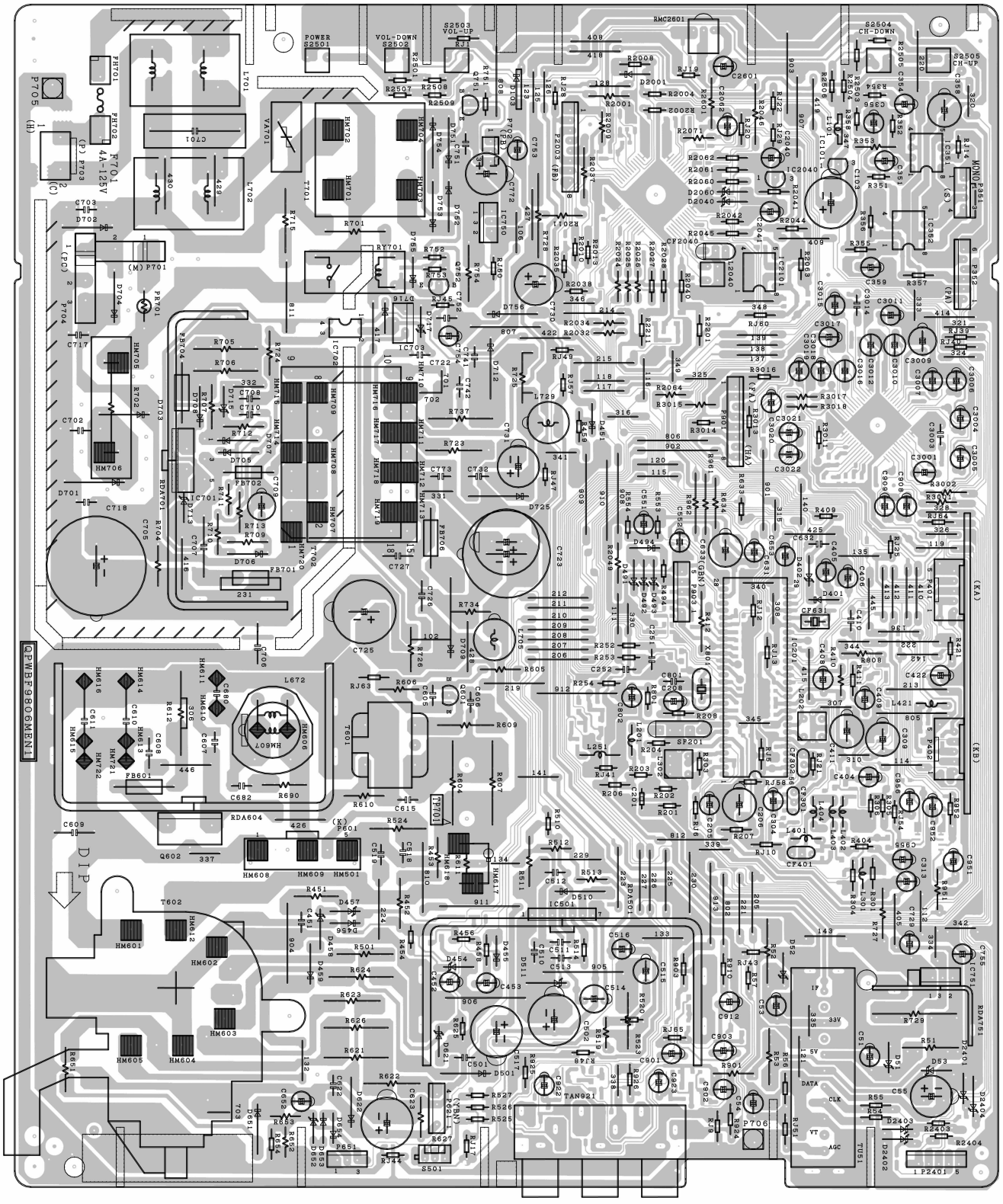


1	2	3	4	5	6	7	8	9	10

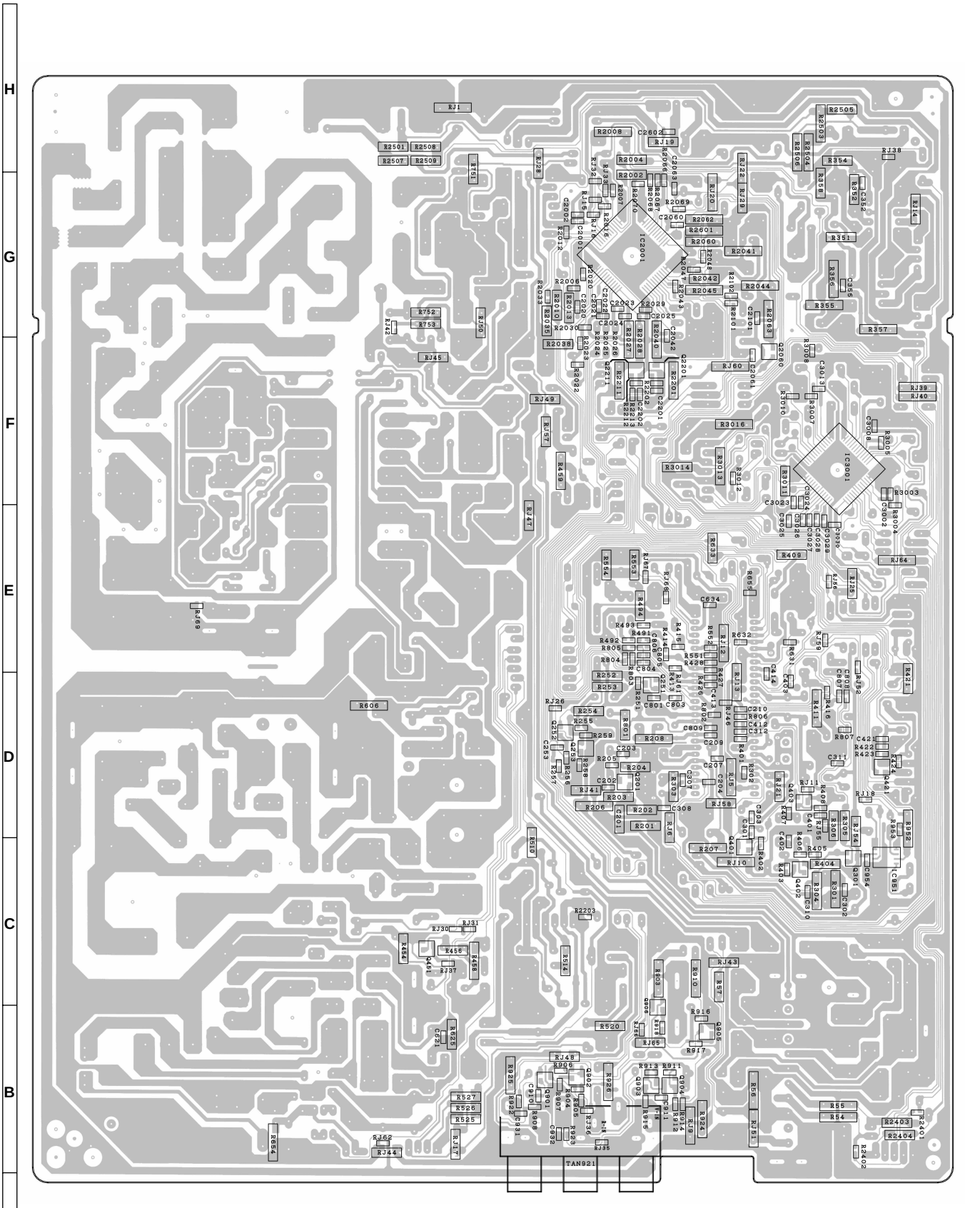


10	11	12	13	14	15	16	17	18	19

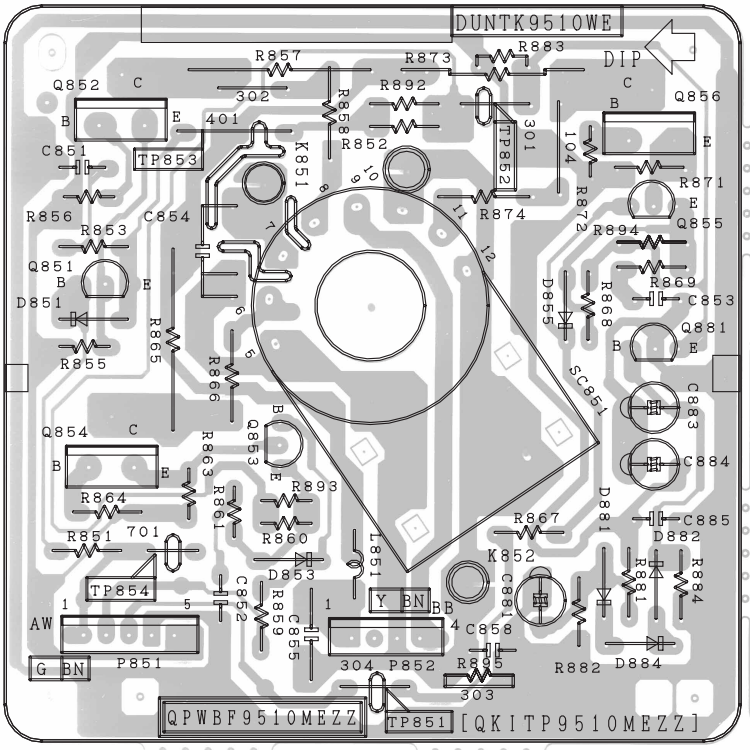
PRINTED WIRING BOARD ASSEMBLIES



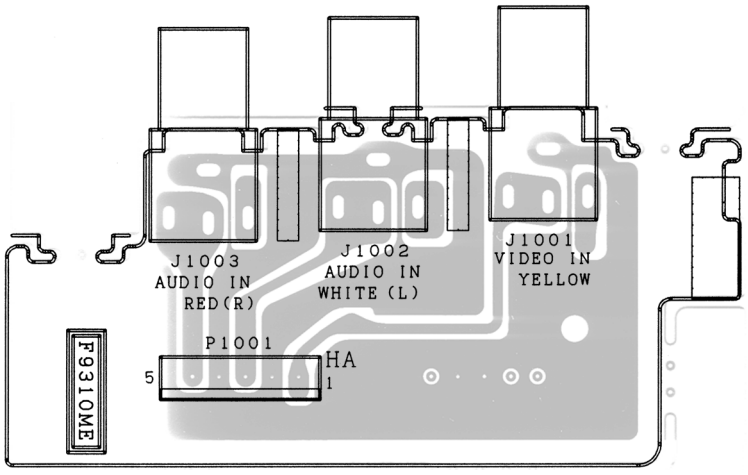
PWB-A : MAIN Unit (Wiring Side)



PWB-A : MAIN Unit (Chip Parts Side)



PWB-B : CRT Unit (Wiring Side)



PWB-H : FRONT AV Unit (Wiring Side)

PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual; electrical components having such features are identified by ⚠ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which dose no have the same safety characteristic as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

in **USA**: Contact your nearest SHARP Parts Distributor to order. For location of SHARP Parts Distributor, Please call Toll-Free; 1-800-BE-SHARP

LISTE DES PIECES

CHANGE DES PIECES

Les pi`eces de rechange qui pr élelesentent ces caract éleristiques sp éleciales de s élecurit éle, sont identifi élees dans ce manuel : les pi`eces élelectriques qui pr élesentent ces particularit éles, sont rep éler élee par la marque ⚠ et sont hachur élees dans les listes de pi`eces et dans les diagrammes sch élematiques.
La substitution d'une pi`ece de rechange par une autre qui ne pr éLesente pas les m éoemes caract éLeristiques de s élecurit éle que la pi`ece recommand élee parl'usine et dans ce manuel de service, peut provoquer une éLelectrocution, un incendie ou toutautre sinistre.

"COMMENT COMMANDER LES PIECES DE RECHANGE"

Pour que votre commande soit rapidement et correctement remplie, veuillez fournir les renseignements suivants.

1. NUMERO DU MODELE
2. NO. DE REF
3. NO. DE PIECE
4. DESCRIPTION

in **CANADA**: Contact SHARP Electronics of Conada Limited
Phone (416) 890-2100

★ MARK: SPARE PARTS-DELIVERY SECTION

▲ MARK: X- RAY RELATED PARTS

★MARQUE: SECTION LIVRAISON DES PIECES DE RECHANGE

▲ MARQUE: PIECES RELATIVE AUX RAYONS X

PICTURE TUBE

Ref. No.	Part No.	★	Description	Code
▲⚠ V101	VB68ADT2503*S	M	Picture Tube (I.T.C.)	CN
⚠ L703	RCiLG0038MEZZ	M	Degaussing Coil	AQ
	MSPRT0002MEZZ	M	Spring for CRT	AA
	QEARC2702MEZZ	M	Grounding Part	AH

PRINTED WIRING BOARD ASSEMBLIES *(NOT REPLACEMENT ITEM)*

PWB-A DUNTK9806WEK4	–	MAIN Unit (27L-S100, CL27S10)	—
PWB-A DUNTK9806WEK5	–	MAIN Unit (27L-S180, CL27S18)	—
PWB-B DUNTK9510WEK1	–	CRT Unit	—
PWB-C DUNTK9310WEK1	–	FRONT AV Unit	—

PWB-A: DUNTK9806WEK4 (27L-S100, CL27S10)
PWB-A: DUNTK9806WEK5 (27L-S180, CL27S18)
MAIN UNIT

TUNER

NOTE: THE PARTS HERES SHOWN ARE SUPPLIED AS AN ASSEMBLY NOT INDEPENEDENTLY.

Ref. No.	Part No.	★	Description	Code
⚠ TU51	VTU115B8035AT	M	Tuner	

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC101	VHiKA78S05P-1	J	KA78S05P	AD
▲⚠ IC201	RH-iX3253CEZZ	J	TA1268AN	AV
IC351	VHiAN7511//-1	J	I.C.	AK
IC352	VHiAN7511//-1	J	I.C.	AK
⚠ IC501	VHiTA8427K/-1	J	TA8427K	AL
⚠ IC701	VHiSTRF66261E	J	STR-F6626	AX
IC702	RH-FX0034CEZZ	J	PC817	AE
⚠ IC703	VHiSE120N//-1	J	SE120N	AG
⚠ IC750	VHiKA7809Pi-1	M	KA7809PI	AE
⚠ IC751	VHiKA7809Pi-1	M	KA7809PI	AE
IC951	VHiMM1111XF1E	J	MM1111XFBE	AE
IC2001	RH-iX3256CEZZ	J	TMPA8701CMF142	
IC2040	VHiKiA7045P-1	J	KIA7045P	AD
IC2101	VHiM24C01B/-1	J	M24C01-BN6	AF
IC3001	VHiCXA2074Q-1	J	CXA2074Q	AY

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q201	VS2SC2735//1E	J	2SC2735	AC
Q301	VS2SD601AR/-1	J	2SD601	AC
Q401	VS2SD601AR/-1	J	2SD601	AC
Q402	VS2SB709AR/-1	J	2SB709	AC
Q403	VS2SD601AR/-1	J	2SD601	AC
Q421	VS2SB709AR/-1	J	2SB709	AC
Q451	VS2SB709AR/-1	J	2SB709	AC
Q601	VS2SC2482//-1	J	2SC2482	AD
⚠ Q602	VS2SD2539//1E	J	2SD2539	
Q751	VS2SC3198-Y-1	J	2SC3198(Y)	AA

Ref. No.	Part No.	★	Description	Code

PWB-A: DUNTK9806WEK4 (27L-S100, CL27S10)
PWB-A: DUNTK9806WEK5 (27L-S180, CL27S18)
MAIN UNIT (Continued)

Q901	VS2SD601AR/-1	J	2SD601 (27L-S180, CL27S18)	AC
Q902	VS2SD601AR/-1	J	2SD601 (27L-S180, CL27S18)	AC
Q903	VS2SD601AR/-1	J	2SD601 (27L-S180, CL27S18)	AC
Q904	VS2SD601AR/-1	J	2SD601 (27L-S180, CL27S18)	AC
Q2060	VS2SD601AR/-1	J	2SD601	AC
Q2201	VS2SD601AR/-1	J	2SD601	AC
Q2211	VS2SD601AR/-1	J	2SD601	AC

DIODES

D51	RH-EX0611GEZZ	J	Zener Diode	AA
D52	RH-EX0673GEZZ	J	Zener Diode	AB
D53	RH-EX0611GEZZ	J	Zener Diode	AA
D103	VHD1SS119//-1	J	Diode	AB
D401	VHD1SS119//-1	J	Diode	AB
D402	RH-EX0604GEZZ	J	Zener Diode	AB
D454	RH-EX0611GEZZ	J	Zener Diode	AA
D455	VHD1SS119//-1	J	Diode	AB
D456	VHD1SS119//-1	J	Diode	AB
D457	RH-EX0217CEZZ	J	Zener Diode	AB
D458	RH-EX0217CEZZ	J	Zener Diode	AB
D459	VHD1SS119//-1	J	Diode	AB
⚠ D501	RH-DX0131CEZZ	J	Diode	AC
⚠ D510	RH-DX0441CEZZ	J	Diode	AC
D621	RH-EX0631GEZZ	J	Zener Diode	AA
D622	RH-DX0131CEZZ	J	Diode	AC
▲⚠ D651	RH-DX0131CEZZ	J	Diode	AC
▲⚠ D652	RH-EX1313CEZZ	M	Zener Diode, 9.1V	AB
▲⚠ D653	VHD1SS119//-1	J	Diode	AB
▲⚠ D654	VHD1SS119//-1	J	Diode	AB
⚠ D701	RH-DX0154CEZZ	J	Diode	AC
⚠ D702	RH-DX0154CEZZ	J	Diode	AC
⚠ D703	RH-DX0154CEZZ	J	Diode	AC
⚠ D704	RH-DX0154CEZZ	J	Diode	AC
D705	VHD1SS82///1A	J	Diode	AC
D706	RH-DX0066GEZZ	J	Diode	AB
D707	VHD1SS82///1A	J	Diode	AC
D708	RH-DX0066GEZZ	J	Diode	AB
⚠ D709	RH-DX0229CEZZ	J	Diode	AF
⚠ D712	RH-DX0407CEZZ	J	Diode	AD
⚠ D713	RH-EX0673GEZZ	J	Zener Diode	AB
⚠ D715	RH-EX0610GEZZ	J	Zener Diode	AA
D716	VHD1SS119//-1	J	Diode	AB
D717	RH-EX0650GEZZ	J	Zener Diode	AB
⚠ D725	RH-DX0407CEZZ	J	Diode	AD
⚠ D751	RH-DX0441CEZZ	J	Diode	AC
⚠ D752	RH-DX0441CEZZ	J	Diode	AC
⚠ D753	RH-DX0441CEZZ	J	Diode	AC
⚠ D754	RH-DX0441CEZZ	J	Diode	AC
D755	VHD1SS119//-1	J	Diode	AB
⚠ D756	RH-DX0441CEZZ	J	Diode	AC
D2001	VHD1SS119//-1	J	Diode	AB
D2011	RH-EX0611GEZZ	J	Zener Diode	AA

PACKAGED CITCUITS

⚠ PR701	RMPTP0092CEZZ	J	Packaged Circuit	AH
X801	RCRSB0205CEZZ	J	Crystal	AF

FILTERS

CF301	RFiLC0029TAZZ	J	Ceramic Filter	AD
CF401	RFiLC0013CEZZ	J	Ceramic Filter	AE
CF631	RFiLA0034CEZZ	J	Ceramic Filter	AD
CF2040	RFiLC0121GEZZ	J	Ceramic Filter	AD
SF201	RFiLC0405CEZZ	J	SAW Filter	AH

COILS

L201	VP-XF1R2K0000	J	Peaking 1.2µH	AB
L202	RCiLi0588CEZZ	J	IF Coil	AF
L301	VP-XF8R2K0000	J	Peaking 8.2µH	AB
L302	RCiLi0613CEZZ	J	IF Coil	AE
L401	VP-XF6R8K0000	J	Peaking 6.8µH	AB
L402	VP-XF3R3K0000	J	Peaking 3.3µH	AB
L403	VP-XF8R2K0000	J	Peaking 8.2µH	AB
L404	VP-XF8R2K0000	J	Peaking 8.2µH	AB
L421	VP-XF680K0000	J	Peaking 68µH	AB
L672	RCiLZ0101MEZZ	M	Coil	AE
⚠ L701	RCiLF0025PEZZ	M	Coil	AE
⚠ L702	RCiLF0025PEZZ	M	Coil	AE
⚠ L705	RCiLP0179CEZZ	J	Coil	AD
L729	RCiLP0179CEZZ	J	Coil	AD
L2040	RCiLB0159CEZZ	J	Oscillation Coil	AE

TRANSFORMERS

T601	RTRNZ0057PEZZ	R	Transformer	AK
⚠ T602	RTRNF0033MEZZ	M	H-Volt Transformer	AY
⚠ T701	RTRNP0543CEZZ	J	Power Transformer	AM
⚠ T702	RTRNZ0017MEZZ	M	Transformer	AM

CAPACITORS

[EL.··· Electrolytic, M-Poly.··· Metalized Polypro Film]

C51	VCEA0A1CW476M	J	47	16V	EL.	AB
C53	VCEA0A1HW105M	J	1.0	50V	EL.	AB
C54	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C55	VCEA0A1CW108M	J	1000	16V	EL.	AD
C103	VCEA0A1CW228M	M	2200	16V	EL.	AC
C201	VCKYMN1HB102K	J	1000p	50V	Ceramic	AA
C202	VCKYCY1HF103Z	J	0.01	50V	Ceramic	AA
C203	VCKYCY1HB102K	J	1000p	50V	Ceramic	AA
C204	VCKYCY1HF103Z	J	0.01	50V	Ceramic	AA
C205	VCEA0A1HW474M	J	0.47	50V	EL.	AB
C206	VCEA0A1CW337M	J	330	16V	EL.	AC
C207	VCKYCY1HF103Z	J	0.01	50V	Ceramic	AA
C208	VCEA0A1HW474M	J	0.47	50V	EL.	AB
C209	VCKYCY1HB222K	J	2200p	50V	Ceramic	AA
C210	VCKYCY1HB102K	J	1000p	50V	Ceramic	AA
C301	VCCCCY1HH330J	J	33p	50V	Ceramic	AA
C302	VCCCCY1HH151J	J	150p	50V	Ceramic	AA
C303	VCCCCY1HH390J	J	39p	50V	Ceramic	AA
C307	VCCCCY1HH1R5C	J	1.5p	50V	Ceramic	AD
C308	VCKYCY1HB102K	J	1000p	50V	Ceramic	AA
C309	VCEA0A1CW337M	J	330	16V	EL.	AC
C313	VCEA0A1CW476M	J	47	16V	EL.	AB
C351	VCEA0A1HW106M	J	10	50V	EL.	AB
C352	VCKYCY1HB332K	J	3300p	50V	Ceramic	AA
C354	VCEA0A1HW106M	J	10	50V	EL.	AB
C355	VCKYCY1HB332K	J	3300p	50V	Ceramic	AA
C356	VCEA0A1HW106M	J	10	50V	EL.	AB
C358	VCEA0A1CW477M	J	470	16V	EL.	AC
C359	VCEA0A1HW106M	J	10	50V	EL.	AB
C401	VCKYCY1HB331K	J	330p	50V	Ceramic	AA
C402	VCCCCY1HH101J	J	100p	50V	Ceramic	AA
C403	VCKYCY1CB104K	J	0.1	16V	Ceramic	AB
C404	VCEA0A1HW106M	J	10	50V	EL.	AB
C405	VCEA0A1HW335M	J	3.3	50V	EL.	AB
C406	VCEA0A1HW225M	J	2.2	50V	EL.	AB
C408	VCEA0A1HW106M	J	10	50V	EL.	AB
C409	VCEA0A1HW335M	J	3.3	50V	EL.	AB
C410	RC-QZA104TAYK	J	0.1	50V	Mylar	AB
C411	VCEA0A1CW337M	J	330	16V	EL.	AC
C412	VCKYCY1HB103K	J	0.01	50V	Ceramic	AA
C413	VCKYCY1HB103K	J	0.01	50V	Ceramic	AA
C414	VCKYCY1CB104K	J	0.1	16V	Ceramic	AB
C421	VCCCCY1HH330J	J	33p	50V	Ceramic	AA
C422	VCEA0A1CW476M	J	47	16V	EL.	AB
C451	RC-QZA104TAYK	J	0.1	50V	Mylar	AB
C452	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C453	VCEA0A1CW226M	J	22	16V	EL.	AB

PWB-A: DUNTK9806WEK4 (27L-S100, CL27S10)
PWB-A: DUNTK9806WEK5 (27L-S180, CL27S18)
MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description			Code
C501	VCKYPA2HB102K	J	1000p	500V	Ceramic	AA
C502	VCEA0A1VW108M	J	1000	35V	EL.	AD
C510	VCFYSA1JA564J	J	0.56	63V	Mylar	AE
C511	VCKYPA2HB391K	J	390p	500V	Ceramic	AA
C512	RC-QZA473TAYK	J	0.047	50V	Mylar	AB
C513	RC-QZA103TAYK	J	0.01	50V	Mylar	AA
C514	VCEA0A1VW107M	J	100	35V	EL.	AC
C515	VCEA0A1HW474M	J	0.47	50V	EL.	AB
C516	VCSATA1VE684K	J	0.68	35V	Tantalum	AC
C517	VCEA0A1VW108M	J	1000	35V	EL.	AD
C518	VCFYSA1JA473J	J	0.047	63V	Mylar	AC
C551	VCSATA1CE225K	J	2.2	16V	Tantalum	AB
C552	VCEA0A1HW225M	J	2.2	50V	EL.	AB
C606	VCKYPA2HB561K	J	560p	500V	Ceramic	AA
C607	VCKYPA1HB472K	J	4700p	50V	Ceramic	AA
▲⚠ C610	VCFPVC3CA772H	M	7700p	1.6kV	M-Poly.	
▲⚠ C611	VCFPVC3CA772H	M	7700p	1.6kV	M-Poly.	
C615	VCKYPA2HB102K	J	1000p	500V	Ceramic	AA
C623	VCEA4A2EN106M	J	10	250V	EL.	AD
C631	VCEA0A1HW335M	J	3.3	50V	EL.	AB
C632	RC-QZA103TAYK	J	0.01	50V	Mylar	AA
C633	VCEA0A1CW477M	J	470	16V	EL.	AC
C652	VCEA0A1HW106M	J	10	50V	EL.	AB
C653	VCEA0A1HW106M	J	10	50V	EL.	AB
C680	VCFPVC2DB474J	M	0.47	200V	M-Poly.	
C682	VCKYPA2HB331K	J	330p	500V	Ceramic	AA
⚠ C701	RC-FZ017SCEZZ	J	0.22	AC250V	Plastic	AD
C702	RC-KZ0029CEZZ	J	0.01	AC250V	Ceramic	AC
C703	RC-KZ0029CEZZ	J	0.01	AC250V	Ceramic	AC
⚠ C705	RC-EZ0800CEZZ	J	560	200V	EL.	AQ
⚠ C706	RC-KZ0092GEZZ	J	0.0033	AC250V	Ceramic	AC
C707	VCFPVC3CA222H	J	2200p	1.6kV	M-Poly.	AE
C708	VCCSPA1HL471J	J	470p	50V	Ceramic	AA
C709	VCEA0A1VW107M	J	100	35V	EL.	AC
C710	RC-QZA102TAYJ	J	1000p		Mylar	AB
C717	VCKYPA2HB472K	J	4700p	500V	Ceramic	AB
C718	VCKYPA2HB472K	J	4700p	500V	Ceramic	AB
C722	RC-QZA104TAYK	J	0.1	50V	Mylar	AB
⚠ C723	RC-EZ0724CEZZ	J	100	160V	EL.	AG
⚠ C725	RC-EZ0809CEZZ	J	220	160V	EL.	AL
C726	RC-KZ0338CEZZ	J	Capacitor			AD
C727	RC-KZ0338CEZZ	J	Capacitor			AD
C729	VCEA0A1CW106M	J	10	16V	EL.	AB
⚠ C730	RC-EZ0385CEZZ	J	1000	15V	EL.	AE
⚠ C731	RC-EZ0385CEZZ	J	1000	15V	EL.	AE
C732	VCKYPA2HB102K	J	1000p	500V	Ceramic	AA
C741	VCKYPA2HB102K	J	1000p	500V	Ceramic	AA
C742	VCKYPA2HB102K	J	1000p	500V	Ceramic	AA
C753	VCEA0A1CW107M	J	100	16V	EL.	AC
C755	VCEA0A1CW476M	J	47	16V	EL.	AB
C772	VCEA0A1VW477M	J	470	35V	EL.	AB
C801	RC-QZA223TAYK	J	0.022	50V	Mylar	AB
C802	VCEA0A1HW474M	J	0.47	50V	EL.	AB
C803	VCCCCY1HH110J	J	11p	50V	Ceramic	AA
C804	VCKYCY1CB104K	J	0.1	16V	Ceramic	AB
C805	VCKYCY1CB104K	J	0.1	16V	Ceramic	AB
C806	VCKYCY1CB104K	J	0.1	16V	Ceramic	AB
C807	VCCCCY1HH221J	J	220p	50V	Ceramic	AA
C808	VCKYCY1HB102K	J	1000p	50V	Ceramic	AA
C901	VCEA0A1HW335M	J	3.3	50V	EL.	AB
			(27L-S180, CL27S18)			
C902	VCEA0ACW476M	J	47	16V	EL.	AB
			(27L-S180, CL27S18)			
C903	VCEA0A1HW335M	J	3.3	50V	EL.	AB
			(27L-S180, CL27S18)			
C908	VCEA0A1HW225M	J	2.2	50V	EL.	AB
C909	VCEA0A1HW225M	J	2.2	50V	EL.	AB
C910	VCKYCY1HB681K	J	680p	50V	Ceramic	AA
			(27L-S180, CL27S18)			
C911	VCKYCY1HB681K	J	680p	50V	Ceramic	AA
			(27L-S180, CL27S18)			
C922	VCEA0A1HW335M	J	3.3	50V	EL.	AB
			(27L-S180, CL27S18)			
C923	VCEA0A1HW335M	J	3.3	50V	EL.	AB
			(27L-S180, CL27S18)			
C931	VCKYCY1EB183K	J	0.018	25V	Ceramic	AA
			(27L-S180, CL27S18)			
C932	VCKYCY1EB183K	J	0.018	25V	Ceramic	AA
			(27L-S180, CL27S18)			
C951	VCEA0A1HW106M	J	10	50V	EL.	AB
C952	VCEA0A1HW106M	J	10	50V	EL.	AB
C954	VCKYCY1HF103Z	J	0.01	50V	Ceramic	AA
C955	VCEA0A1CW106M	J	10	16V	EL.	AB
C2001	VCCCCY1HH101J	J	100p	50V	Ceramic	AA
C2002	VCCCCY1HH101J	J	100p	50V	Ceramic	AA
C2040	VCEA0A1AW107M	J	100	10V	EL.	AB
C2041	VCEA0A1HW105M	J	1.0	50V	EL.	AB
C2060	VCKYCY1CB104K	J	0.1	16V	Ceramic	AB
C2061	VCCCCY1HH101J	J	100p	50V	Ceramic	AA
C2062	VCEA0A1AW107M	J	100	10V	EL.	AB
C2201	VCKYCY1HB152K	J	1500p	50V	Ceramic	AA
C2202	VCCCCY1HH390J	J	39p	50V	Ceramic	AA
C2601	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C2602	VCCCCY1HH101J	J	100p	50V	Ceramic	AA
C3001	VCE9GA1HW475M	J	4.7	50V	EL.(N.P)	AB
C3002	VCKYCY1HB562K	J	5600p	50V	Ceramic	AA
C3003	RC-QZA123TAYK	J	0.012	50V	Mylar	AB
C3004	VCEA0A1HW105M	J	1.0	50V	EL.	AB
C3005	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C3006	VCEA0A1HW106M	J	10	50V	EL.	AB
C3007	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C3008	VCKYCY1HF103Z	J	0.01	50V	Ceramic	AA
C3009	VCEA0A1CW227M	J	220	16V	EL.	AC
C3010	VCE9GA1HW475M	J	4.7	50V	EL.(N.P)	AB
C3011	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C3012	VCE9GA1HW475M	J	4.7	50V	EL.(N.P)	AB
C3013	VCKYCY1HB272K	J	2700p	50V	Ceramic	AA
C3014	RC-QZA473TAYK	J	0.047	50V	Mylar	AB
C3015	VCSATA1CE335K	J	3.3	16V	Tantalum	AC
C3016	VCE9GA1HW475M	J	4.7	50V	EL.(N.P)	AB
C3017	VCSATA1CE106K	J	10	16V	Tantalum	AD
C3018	VCEA0A1HW105M	J	1.0	50V	EL.	AB
C3019	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C3020	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C3021	VCEA0A1HW475M	J	4.7	50V	EL.	AB
C3022	VCEA0A1HW475M	J	4.7	50V	EL.	AB

RESISTORS

[M-Ox.··· Metal Oxide, M-Film··· Metal Film]

RJ1	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ9	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ10	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ11	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ12	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ13	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ14	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ15	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ16	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ17	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ19	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ20	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ21	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ22	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ25	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ26	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ28	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ29	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ30	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ31	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ32	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ35	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ36	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ37	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ38	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ39	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ40	VRD-MN2BE000J	J	0	1/8W	Carbon	AA

PWB-A: DUNTK9806WEK4 (27L-S100, CL27S10)
PWB-A: DUNTK9806WEK5 (27L-S180, CL27S18)
MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description			Code
RJ41	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ42	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ43	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ46	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ48	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ49	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ50	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ51	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ52	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ54	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ55	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ57	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ58	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ60	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ61	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
RJ63	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ64	VRD-MN2BE000J	J	0	1/8W	Carbon	AA
RJ67	VRS-CY1JF000J	J	0	1/16W	M-Ox.	AA
⚠ R51	VRS-RG3AB151J	M	150	1W	M-Ox.	
⚠ R52	VRS-RG3DB123J	J	12k	2W	M-Ox.	AA
⚠ R53	VRS-RG3AB470J	J	47	1W	M-Ox.	AA
R54	VRD-MN2BE101J	J	100	1/8W	Carbon	AA
R55	VRD-MN2BE101J	J	100	1/8W	Carbon	AA
R56	VRD-MN2BE823J	J	82k	1/8W	Carbon	AA
R57	VRD-MN2BE392J	J	3.9k	1/8W	Carbon	AA
R201	VRD-MN2BE151J	J	150	1/8W	Carbon	AA
R202	VRD-MN2BE122J	J	1.2k	1/8W	Carbon	AA
R203	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R204	VRD-MN2BE270J	J	27	1/8W	Carbon	AA
R205	VRS-CY1JF331J	J	330	1/16W	M-Ox.	AA
R206	VRD-MN2BE121J	J	120	1/8W	Carbon	AA
R207	VRD-MN2BE4R7J	J	4.7	1/8W	Carbon	AA
R208	VRD-MN2BE331J	J	330	1/8W	Carbon	AA
R301	VRD-MN2BE222J	J	2.2k	1/8W	Carbon	AA
R302	VRS-CY1JF102J	J	1.0k	1/16W	M-Ox.	AA
R303	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R304	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R305	VRD-MN2BE102J	J	1.0k	1/8W	Carbon	AA
R306	VRD-MN2BE152J	J	1.5k	1/8W	Carbon	AA
R351	VRD-MN2BE683J	J	68k	1/8W	Carbon	AA
R352	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R353	VRD-RA2BE822J	J	8.2k	1/8W	Carbon	AA
R354	VRD-MN2BE223J	J	22k	1/8W	Carbon	AA
R355	VRD-MN2BE683J	J	68k	1/8W	Carbon	AA
R356	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R357	VRD-MN2BE822J	J	8.2k	1/8W	Carbon	AA
R358	VRD-MN2BE223J	J	22k	1/8W	Carbon	AA
R401	VRS-CY1JF682J	J	6.8k	1/16W	M-Ox.	AA
R402	VRS-CY1JF331J	J	330	1/16W	M-Ox.	AA
R403	VRS-CY1JF391J	J	390	1/16W	M-Ox.	AA
R404	VRD-MN2BE102J	J	1.0k	1/8W	Carbon	AA
R405	VRS-CY1JF470J	J	47	1/16W	M-Ox.	AA
R406	VRS-CY1JF680J	J	68	1/16W	M-Ox.	AA
R407	VRS-CY1JF102J	J	1.0k	1/16W	M-Ox.	AA
R408	VRS-CY1JF471J	J	470	1/16W	M-Ox.	AA
R409	VRD-MN2BE562J	J	5.6k	1/8W	Carbon	AA
R410	VRD-RA2BE154J	J	150k	1/8W	Carbon	AA
R411	VRD-MN2BE153J	J	15k	1/8W	Carbon	AA
R412	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R413	VRS-CY1JF101J	J	100	1/16W	M-Ox.	AA
R414	VRS-CY1JF101J	J	100	1/16W	M-Ox.	AA
R415	VRS-CY1JF101J	J	100	1/16W	M-Ox.	AA
R421	VRD-MN2BE152J	J	1.5k	1/8W	Carbon	AA
R422	VRS-CY1JF472J	J	4.7k	1/16W	M-Ox.	AA
R423	VRS-CY1JF152J	J	1.5k	1/16W	M-Ox.	AA
R424	VRS-CY1JF102J	J	1.0k	1/16W	M-Ox.	AA
⚠ R451	VRS-RG2HC103J	J	10k	1/2W	M-Ox.	AA
R452	VRD-RM2HD153J	J	15k	1/2W	Carbon	AA
R453	VRD-RA2EE683J	J	68k	1/4W	Carbon	AA
R454	VRD-MN2BE102J	J	1.0k	1/8W	Carbon	AA
R456	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R458	VRD-MN2BE152J	J	1.5k	1/8W	Carbon	AA
⚠ R501	VRN-RL3ABR56J	J	0.56	1W	M-Film	AA
R510	VRD-MN2BE471J	J	470	1/8W	Carbon	AA
R511	VRD-RA2BE823G	J	82k	1/8W	Carbon	AB
R512	VRD-RA2BE124G	J	120k	1/8W	Carbon	AA
R513	VRD-RA2BE473J	J	47k	1/8W	Carbon	AA
R514	VRD-MN2BE101J	J	100	1/8W	Carbon	AA
R519	VRD-RA2BE153G	J	15k	1/8W	Carbon	AA
R520	VRD-MN2BE184J	J	180k	1/8W	Carbon	AA
R523	VRN-RL3AB1R0J	M	1.0	1W	M-Film	
R524	VRS-RG3AB391J	J	390	1W	M-Ox.	AA
R526	VRD-MN2BE562J	J	5.6k	1/8W	Carbon	AA
R551	VRS-CY1JF472J	J	4.7k	1/16W	M-Ox.	AA
R552	VRS-CY1JF102J	J	1.0k	1/16W	M-Ox.	AA
R553	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R554	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
⚠ R604	VRS-RG3LB392J	M	3.9k	3.0W	M-Ox.	
R605	VRD-RA2BE331J	J	330	1/8W	Carbon	AA
R606	VRD-RA2BE331J	J	330	1/8W	Carbon	AA
⚠ R607	VRS-RG3LB392J	M	3.9k	3.0W	M-Ox.	
⚠ R609	VRS-RG3AB562J	M	5.6k	1W	M-Ox.	
R610	VRD-RM2HD220J	J	22	1/2W	Carbon	AA
⚠ R611	VRS-KA3NG3R3K	J	3.3	7.0W	M-Ox.	AD
R621	VRN-RL3DB1R2J	M	1.2	2W	M-Film	
R622	VRN-RL3ABR39J	M	0.39	1W	M-Film	
R623	VRN-RL3AB2R7J	M	2.7	1W	M-Film	AA
⚠ R624	VRS-RG3DB332J	J	3.3k	2W	M-Ox.	
R625	VRD-MN2BE102J	J	1.0k	1/8W	Carbon	AA
R627	VRD-RM2HD224J	J	220k	1/2W	Carbon	AA
R631	VRS-CY1JF391J	J	390	1/16W	M-Ox.	AA
R632	VRS-CY1JF152J	J	1.5k	1/16W	M-Ox.	AA
R633	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R634	VRD-RA2BE4R7J	J	4.7	1/8W	Carbon	AA
▲⚠ R651	VRS-RG2HC270J	M	27	1/2W	M-Ox.	AA
▲⚠ R652	VRN-RA2BK103F	J	10k	1/8W	M-Film	AA
▲⚠ R653	VRN-RA2BK822F	J	8.2k	1/8W	M-Film	AA
▲⚠ R654	VRD-MN2BE184J	J	180k	1/8W	Carbon	AA
▲⚠ R655	VRS-CY1JF104J	J	100k	1/16W	M-Ox.	AA
R690	VRS-RG2HC102J	J	1.0k	1/2W	M-Ox.	AA
⚠ R701	RR-HZ0048CEZZ	J	3.9M	1/2W		AB
⚠ R702	VRW-KQ3NC1R2K	J	1.2	7.0W	Cement	AE
R704	VRD-RM2HD154J	J	150k	1/2W	Carbon	AA
⚠ R705	VRN-RL3DBR22J	J	0.22	2W	M-Film	AA
⚠ R706	VRN-RL3DBR27J	M	0.27	2W	M-Film	
R707	VRS-RG2HC681J	J	680	1/2W	M-Ox.	AA
⚠ R709	VRN-GA2EB1R0J	J	1.0	1/4W	M-Film	AA
R710	VRD-RM2HD470J	J	47	1/2W	Carbon	AA
R711	VRD-RA2BE242J	J	2.4k	1/8W	Carbon	AA
⚠ R715	VRS-RG3DB153J	J	15k	2W	M-Ox.	AA
⚠ R723	VRN-RL3DBR39J	M	0.39	2W	M-Film	
R724	VRS-RG2HC332J	J	3.3k	1/2W	M-Ox.	AA
R725	VRS-RG2HC821J	M	820	1/2W	M-Ox.	
⚠ R726	VRS-RG2HC122J	M	1.2k	1/2W	M-Ox.	
R727	VRD-RA2BE271J	J	270	1/8W	Carbon	AA
⚠ R728	VRN-RL3LB4R7J	M	4.7	3.0W	M-Film	
R734	VRD-RM2HD124J	J	120k	1/2W	Carbon	AA
⚠ R737	VRN-RL3DBR56J	M	0.56	2W	M-Film	
R751	VRD-MN2BE473J	J	47k	1/8W	Carbon	AA
R801	VRD-MN2BE332J	J	3.3k	1/8W	Carbon	AA
R802	VRS-CY1JF332J	J	3.3k	1/16W	M-Ox.	AA
R803	VRS-CY1JF222J	J	2.2k	1/16W	M-Ox.	AA
R804	VRS-CY1JF222J	J	2.2k	1/16W	M-Ox.	AA
R805	VRS-CY1JF222J	J	2.2k	1/16W	M-Ox.	AA
R806	VRS-CY1JF333J	J	33k	1/16W	M-Ox.	AA
R807	VRS-CY1JF152J	J	1.5k	1/16W	M-Ox.	AA
R808	VRD-RA2BE102J	J	1.0k	1/8W	Carbon	AA
R901	VRD-RA2BE331J	J	330	1/8W	Carbon	AA
				(27L-S180, CL27S18)		
R903	VRD-MN2BE102J	J	1.0k	1/8W	Carbon	AA
				(27L-S180, CL27S18)		
R904	VRS-CY1JF683J	J	68k	1/16W	M-Ox.	AA
				(27L-S180, CL27S18)		
R905	VRS-CY1JF223J	J	22k	1/16W	M-Ox.	AA
				(27L-S180, CL27S18)		
R906	VRS-CY1JF392J	J	3.9k	1/16W	M-Ox.	AA
				(27L-S180, CL27S18)		

PWB-A: DUNTK9806WEK4 (27L-S100, CL27S10)
PWB-A: DUNTK9806WEK5 (27L-S180, CL27S18)
MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
R907	VRS-CY1JF182J	J	1.8k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R908	VRS-CY1JF102J	J	1.0k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R910	VRD-MN2BE102J	J	1.0k 1/8W Carbon (27L-S180, CL27S18)	AA
R911	VRS-CY1JF683J	J	68k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R912	VRS-CY1JF223J	J	22k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R913	VRS-CY1JF392J	J	3.9k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R914	VRS-CY1JF182J	J	1.8k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R915	VRS-CY1JF102J	J	1.0k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R922	VRS-CY1JF102J	J	1.0k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R923	VRS-CY1JF102J	J	1.0k 1/16W M-Ox. (27L-S180, CL27S18)	AA
R924	VRD-MN2BE750J	J	75 1/8W Carbon	AA
R925	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R926	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R951	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R952	VRD-MN2BE102J	J	1.0k 1/8W Carbon	AA
R961	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R962	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R2001	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA
R2002	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R2004	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R2006	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2008	VRD-MN2BE224J	J	220k 1/8W Carbon	AA
R2009	VRD-RA2BE102J	J	1.0k 1/8W Carbon	AA
R2010	VRD-MN2BE102J	J	1.0k 1/8W Carbon	AA
R2012	VRS-CY1JF471J	J	470 1/16W M-Ox.	AA
R2020	VRS-CY1JF223J	J	22k 1/16W M-Ox.	AA
R2022	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2024	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R2025	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R2026	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R2027	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R2028	VRD-MN2BE102J	J	1.0k 1/8W Carbon	AA
R2029	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2030	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2032	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R2035	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R2040	VRD-MN2BE102J	J	1.0k 1/8W Carbon	AA
R2041	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R2042	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R2043	VRS-CY1JF333J	J	33k 1/16W M-Ox.	AA
R2044	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R2045	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R2046	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R2047	VRS-CY1JF221J	J	220 1/16W M-Ox.	AA
R2048	VRS-CY1JF562J	J	5.6k 1/16W M-Ox.	AA
R2060	VRD-MN2BE221J	J	220 1/8W Carbon	AA
R2061	VRD-MN2BE562J	J	5.6k 1/8W Carbon	AA
R2062	VRD-MN2BE183J	J	18k 1/8W Carbon	AA
R2063	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R2064	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
R2067	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2068	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2070	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2071	VRD-RA2BE102J	J	1.0k 1/8W Carbon	AA
R2101	VRS-CY1JF101J	J	100 1/16W M-Ox.	AA
R2102	VRS-CY1JF101J	J	100 1/16W M-Ox.	AA
R2201	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R2202	VRS-CY1JF103J	J	10k 1/16W M-Ox.	AA
R2203	VRS-CY1JF184J	J	180k 1/16W M-Ox.	AA
R2211	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R2212	VRS-CY1JF682J	J	6.8k 1/16W M-Ox.	AA
R2213	VRS-CY1JF333J	J	33k 1/16W M-Ox.	AA
R2401	VRS-CY1JF101J	J	100 1/16W M-Ox.	AA
R2402	VRS-CY1JF101J	J	100 1/16W M-Ox.	AA
R2403	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R2404	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R2501	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R2503	VRD-MN2BE273J	J	27k 1/8W Carbon	AA
R2504	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R2505	VRD-MN2BE563J	J	56k 1/8W Carbon	AA
R2506	VRD-MN2BE563J	J	56k 1/8W Carbon	AA
R2507	VRD-MN2BE823J	J	82k 1/8W Carbon	AA
R2508	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R2509	VRD-MN2BE272J	J	2.7k 1/8W Carbon	AA
R2601	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R3001	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R3002	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R3003	VRS-CY1JF105J	J	1.0M 1/16W M-Ox.	AA
R3004	VRS-CY1JF104J	J	100k 1/16W M-Ox.	AA
R3005	VRS-CY1JF623J	J	62k 1/16W M-Ox.	AA
R3007	VRS-CY1JF332J	J	3.3k 1/16W M-Ox.	AA
R3008	VRS-CY1JF302J	J	3.0k 1/16W M-Ox.	AA
R3010	VRS-CY1JF392J	J	3.9k 1/16W M-Ox.	AA
R3011	VRD-MN2BE102J	J	1.0k 1/8W Carbon	AA
R3012	VRS-CY1JF102J	J	1.0k 1/16W M-Ox.	AA
R3013	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R3014	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R3015	VRD-RA2BE101J	J	100 1/8W Carbon	AB
R3016	VRD-MN2BE750J	J	75 1/8W Carbon	AA
R3017	VRD-RA2BE102J	J	1.0k 1/8W Carbon	AA
R3018	VRD-RA2BE102J	J	1.0k 1/8W Carbon	AA

SWITCHES

S2501	QSW-K0079GEZZ	J	Power	AB
S2502	QSW-K0079GEZZ	J	Vol-down	AB
S2503	QSW-K0079GEZZ	J	Vol-up	AB
S2504	QSW-K0079GEZZ	J	CH-down	AB
S2505	QSW-K0079GEZZ	J	CH-up	AB

MISCELLANEOUS PARTS

⚠ RY701	RRLYJ0081CEZZ	J	Relay	AL
⚠ F701	QFS-B4023CEZZ	J	Fuse, 4A 125V	AC
FB601	RBLN-0047CEZZ	J	Ferrite Bead	AB
FB702	RBLN-0036CEZZ	J	Ferrite Bead	AB
FB704	RBLN-0037CEZZ	J	Ferrite Bead	AB
FB706	RBLN-0037CEZZ	J	Ferrite Bead	AB
FH701	QFSHD1013CEZZ	J	Fuse Holder	AC
FH702	QFSHD1014CEZZ	J	Fuse Holder	AC
P351	QPLGN0461CEZZ	J	Plug, 4-pin (S)	AB
P601	QPLGN0160FJZZ	J	Plug, 5-pin (K)	AD
P621	QPLGN0461CEZZ	J	Plug, 4-pin (YBN)	AB
P651	QPLGN0361CEZZ	J	Plug, 3-pin	AB
P701	QPLGN0207CEZZ	J	Plug, 2-pin (M)	AA
P703	QPLGN0269GEZZ	J	Plug, 2-pin (P)	AB
P901	QPLGN0561CEZZ	J	Plug, 5-pin (HA)	AB
P903	QPLGN0561CEZZ	J	Plug, 5-pin (GBN)	AB
P2401	QPLGN0561CEZZ	J	Plug, 5-pin	AB
RMC2601	RRMCU0235CEZZ	J	R/C Receiver	AK
HM501	LX-GZ3001PEZZ	R	Screw	AB
HM601	LX-GZ3001PEZZ	R	Screw	AB
HM602	LX-GZ3001PEZZ	R	Screw	AB
HM603	LX-GZ3001PEZZ	R	Screw	AB
HM604	LX-GZ3001PEZZ	R	Screw	AB
HM605	LX-GZ3001PEZZ	R	Screw	AB
HM606	LX-GZ3002PEZZ	R	Screw	AB
HM607	LX-GZ3002PEZZ	R	Screw	AB
HM608	LX-GZ3001PEZZ	R	Screw	AB
HM609	LX-GZ3001PEZZ	R	Screw	AB
HM610	LX-GZ3002PEZZ	R	Screw	AB
HM611	LX-GZ3002PEZZ	R	Screw	AB
HM612	LX-GZ3001PEZZ	R	Screw	AB
HM613	LX-GZ3002PEZZ	R	Screw	AB
HM614	LX-GZ3002PEZZ	R	Screw	AB
HM615	LX-GZ3002PEZZ	R	Screw	AB
HM616	LX-GZ3002PEZZ	R	Screw	AB
HM617	LX-GZ3001PEZZ	R	Screw	AB

Ref. No.	Part No.	★	Description	Code

PWB-A: DUNTK9806WEK4 (27L-S100, CL27S10)
PWB-A: DUNTK9806WEK5 (27L-S180, CL27S18)
MAIN UNIT (Continued)

HM618	LX-GZ3001PEZZ	R	Screw	AB
HM701	LX-GZ3001PEZZ	R	Screw	AB
HM702	LX-GZ3001PEZZ	R	Screw	AB
HM703	LX-GZ3001PEZZ	R	Screw	AB
HM704	LX-GZ3001PEZZ	R	Screw	AB
HM705	LX-GZ3001PEZZ	R	Screw	AB
HM706	LX-GZ3001PEZZ	R	Screw	AB
HM707	LX-GZ3001PEZZ	R	Screw	AB
HM708	LX-GZ3001PEZZ	R	Screw	AB
HM709	LX-GZ3001PEZZ	R	Screw	AB
HM710	LX-GZ3001PEZZ	R	Screw	AB
HM711	LX-GZ3001PEZZ	R	Screw	AB
HM712	LX-GZ3001PEZZ	R	Screw	AB
HM713	LX-GZ3001PEZZ	R	Screw	AB
RDA501	PRDAR0234PEFW	R	Heat Sink	AH
RDA604	PRDAR0233PEFW	M	Heat Sink	AE
RDA701	PRDAR1008MEFW	M	Heat Sink	AH
RDA751	PRDAR5072CEFW	J	Heat Sink	AC
TAN921	QTANJ0323CEZZ	M	AV Terminal (27L-S100, CL27S10)	AF
TAN921	QTANJ0523CEZZ	M	AV Terminal (27L-S180, CL27S18)	AG
	LX-BZ3049GEFD	J	Screw	AA
	LX-HZ3007MEFD	M	Screw	

PWB-C: DUNTK9310WEK1
FRONT AV UNIT

J1001	QJAKE0053GEZZ	J	Jack, Video in	AD
J1002	QJAKE0055GEZZ	J	Jack, Audio in (L)	AD
J1003	QJAKE0059GEZZ	J	Jack, Audio in (R)	AC
P1001	QPLGN0541CEZZ	J	Plug, 5-pin (HA)	AB

Ref. No.	Part No.	★	Description	Code

PWB-B: DUNTK9510WEK1
CRT UNIT

TRANSISTORS

Q851	VS2SC3198-Y-1	J	2SC3198(Y)	AA
Q852	VS2SC3789//2E	M	2SC3789	AA
Q853	VS2SC3198-Y-1	J	2SC3198(Y)	AA
Q854	VS2SC3789//2E	M	2SC3789	AA
Q855	VS2SC3198-Y-1	J	2SC3198(Y)	AA
Q856	VS2SC3789//2E	M	2SC3789	AA
Q881	VS2SA1266-Y-1	J	2SA1266(Y)	AA

DIODES

D881	VHD1SS119//-1	J	1SS119	AB
D882	VHD1SS119//-1	J	1SS119	AB
D884	VHD1SS119//-1	J	1SS119	AB

COIL

L851	VP-MK820K0000	J	Peaking 82µH	AB

CAPACITORS

[EL.··· Electrolytic]

C851	VCCSPA1HL391J	J	390p	50V	Ceramic	AA
C852	VCCSPA1HL331J	J	330p	50V	Ceramic	AA
C853	VCCSPA1HL391J	J	390p	50V	Ceramic	AA
C854	RC-KZ0024CEZZ	J	0.001	2kV	Ceramic	AC
C883	VCEA0A1HW106M	J	10	50V	EL.	AB

RESISTORS

[M-Ox.··· Metal Oxide]

	R851	VRD-RA2BE470J	J	47	1/8W	Carbon	AA
	R852	VRD-RA2BE181J	J	180	1/8W	Carbon	AA
	R853	VRD-RA2BE121J	J	120	1/8W	Carbon	AA
	R855	VRD-RA2BE471J	J	470	1/8W	Carbon	AA
	R856	VRD-RA2BE221J	J	220	1/8W	Carbon	AA
⚠	R857	VRS-VV3LB123J	J	12k	3.0W	M-Ox.	AB
	R858	VRD-RM2HD222J	J	2.2k	1/2W	Carbon	AA
	R859	VRD-RA2BE470J	J	47	1/8W	Carbon	AA
	R860	VRD-RA2BE181J	J	180	1/8W	Carbon	AA
	R861	VRD-RA2BE121J	J	120	1/8W	Carbon	AA
	R863	VRD-RA2BE471J	J	470	1/8W	Carbon	AA
	R864	VRD-RA2BE221J	J	220	1/8W	Carbon	AA
⚠	R865	VRS-VV3LB123J	J	12k	3.0W	M-Ox.	AB
	R866	VRD-RM2HD222J	J	2.2k	1/2W	Carbon	AA
	R867	VRD-RA2BE470J	J	47	1/8W	Carbon	AA
	R868	VRD-RA2BE181J	J	180	1/8W	Carbon	AA
	R869	VRD-RA2BE121J	J	120	1/8W	Carbon	AA
	R871	VRD-RA2BE471J	J	470	1/8W	Carbon	AA
	R872	VRD-RA2BE221J	J	220	1/8W	Carbon	AA
⚠	R873	VRS-VV3LB123J	J	12k	3.0W	M-Ox.	AB
	R874	VRD-RM2HD222J	J	2.2k	1/2W	Carbon	AA
	R881	VRD-RA2BE102J	J	1.0k	1/8W	Carbon	AA
	R882	VRD-RA2BE331J	J	330	1/8W	Carbon	AA
	R883	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
	R884	VRD-RA2BE152J	J	1.5k	1/8W	Carbon	AA
	R895	VRD-RA2BE470J	J	47	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P851	QPLGN0541CEZZ	J	Plug, 5-pin (GBN)	AB
P852	QPLGN0441CEZZ	J	Plug, 4-pin (YBN)	AB
SC851	QSOCV0937CEZZ	M	CRT Socket	AF

Ref. No.	Part No.	★	Description	Code

CABINET PARTS

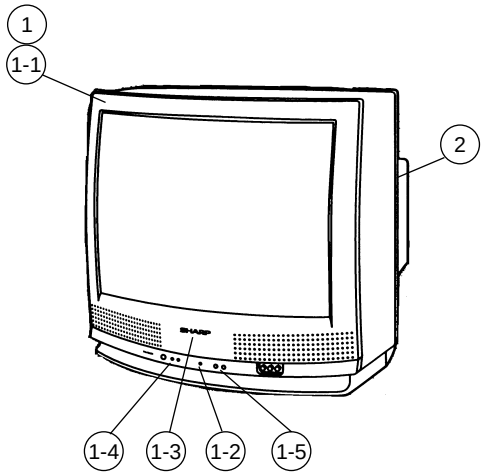
27L-S100, CL27S10

1	CCABA1302MES1	M	Front Cabinet Ass'y	BE
1-1	*Not Available*	–	Front Cabinet	—
1-2	GCOVA1033MEKA	M	Cover for R/C	AD
1-3	HBDGB1009MESA	M	Badge, "SHARP"	AD
1-4	JBTN-1096MEKA	M	Button, Power, Vol-up/down	AD
1-5	JBTN-1097MEKA	M	Button, Ch-up/down	AD
2	GCABB1144MEKA	M	Rear Cabinet	AZ

27L-S180, CL27S18

1	CCABA1296MES1	M	Front Cabinet Ass'y	
1-1	*Not Available*	–	Front Cabinet	—
1-2	GCOVA1033MEKA	M	Cover for R/C	AD
1-3	HBDGB1009MESA	M	Badge, "SHARP"	AD
1-4	JBTN-1096MEKA	M	Button, Power, Vol-up/down	AD
1-5	JBTN-1097MEKA	M	Button, Ch-up/down	AD
2	GCABB1148MEKA	M	Rear Cabinet	AZ

CABINET PARTS LOCATION



Ref. No.	Part No.	★	Description	Code

MISCELLANEOUS PARTS

⚠ ACC701	QACCD3065CESA	M	AC Cord	AG
	QCNW-0130MEZZ	M	Connecting Cord	AF
	QCNW-0134MEZZ	M	Connecting Cord	AE
	QCNW-0166MEZZ	M	Connecting Cord	AD
	QCNW-0167MEZZ	M	Connecting Cord	AC
	QCNW-0239MEZZ	M	Connecting Cord	AH
SP1	VSP0080PBL4YS	M	Speaker, (L)	AG
SP2	VSP0080PBL4YS	M	Speaker, (R)	AG

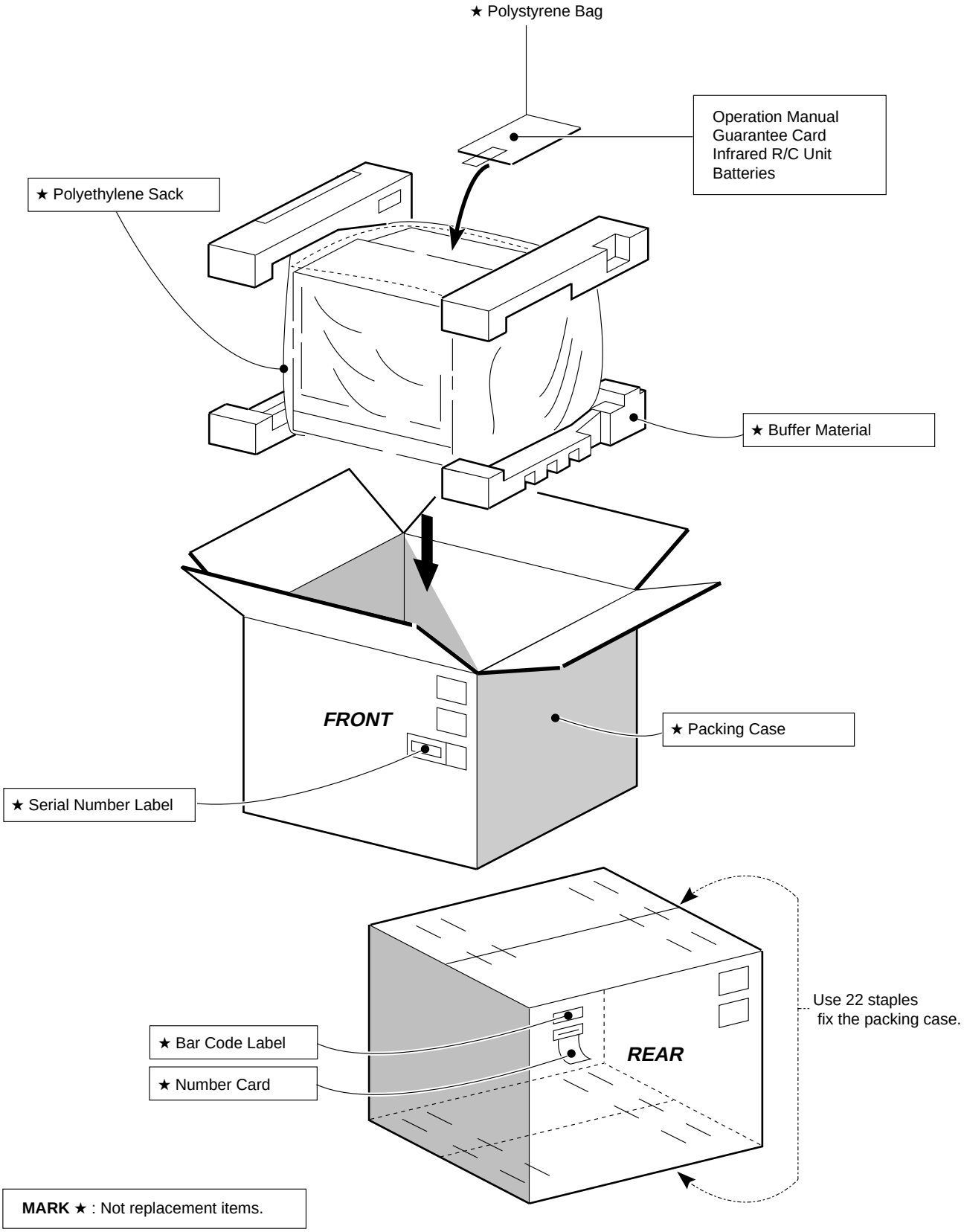
SUPPLIED ACCESORRIES

	TGAN-1006MEZZ	M	Guarantee Card	AA
	TiNS-6552MEZZ	M	Operation Manual (27L-S100, CL27S10)	AD
	TiNS-6553MEZZ	M	Operation Manual (27L-S180, CL27S18)	AD
	RRMCG1324CESA	M	Infrared R/C Unit (27L-S100, CL27S10)	AQ
	RRMCG1395CESA	M	Infrared R/C Unit (27L-S180, CL27S18)	AW

PACKING PARTS
(NOT REPLACEMENT ITEM)

SPAKC0639MEZZ	–	Packing Case	—
SPAKX0165MEZZ	–	Buffer Material	—
SSAKA0004MEZZ	–	Polyethylene Sack	—

PACKING OF THE SET



MARK ★ : Not replacement items.